

The Rural Women Worker

Women and Agricultural Modernization in Northeast Brazil

Izaura Rufino Fischer and Ligia Albuquerque



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*If you have comments on this report,
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please contact*

**Mario Torres
IDRC
Latin America and the Caribbean Region
Plaza de Cagancha 1335 P.9
Casilla de Correo 6739
11.100 Montevideo
URUGUAY**

**Phone: (598-2) 922037/44
Fax: (598-2) 920223
Internet: mtorres@idrc.ca**

or

**Martha Melesse
Programs Branch
IDRC
250 Albert Street. PO Box 8500
Ottawa, ON
Canada K1G 3H9**

**Phone: (613) 236-6163 ext. 2016
Fax: (613) 567-7748
Internet: mmelesse@idrc.ca**

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Foreword

This publication offers an analysis of the rising female employment in rural areas undergoing agricultural modernization in the Northeast of Brazil. It shows the very difficult working conditions of women and their children, the poverty that surrounds them, their views, their complaints, their sadness, and their hopes. It also indicates that current attempts at providing the poor with equitable working and living conditions is a formidable challenge as inequity is deeply rooted in values, practices, beliefs, institutions, and policies. No development is sustainable, nor environment preserved, without profound changes in these conditions.

The study had two main objectives. First, to obtain baseline information on the extent of female seasonal labour in the agricultural crops in the newly irrigated area and the working conditions. Second, to evaluate the role of the State and its provision of adequate labour legislation and social services for women working in rural areas. It examines the conditions under which women participate in paid, seasonal, and agricultural activities; their characteristics; the obstacles to their participation in labour unions and other social organizations; and the coverage of labour and welfare provisions designed to protect them.

In the 1970s, women's studies emerged as a distinctive subject of scholarly and applied concern. This area was often linked to the issues raised by women's social action groups of equity under the law and in the labour market. At the international level, those concerned with Third World problems highlighted the role of women in developing societies. Under the rubric "women in development," they directed attention to the important economic contributions of women in many developing societies, while placing under increasing scrutiny the cultural, political, and institutional constraints of women's activities and certain detrimental effects of economic change.

The trends naturally had an impact upon the population conditions, mainly because women's changing status and roles were affecting their fertility, mortality, and health, not always positively. Groups of researchers consistently began to expose the detrimental effects of development on the well-being of women. In conditions of economic crisis, as women were increasingly drawn into the labour market outside the home, they had to juggle their child care responsibilities with productive roles.

The striking increases in female heads of households, in the proportion of young single women migrating for work, particularly domestic work and seasonal agricultural labour, across continents, across war-zones, and across nations, has had deep social and economic effects. Such factors as wage discrimination have implied low economic gains for these women's productive effort.

The Northeast of Brazil, one of the poorest areas of Latin America because it is drought prone, illustrates many of these conditions. Although the Federal government has always been interested in solving drought problems, it took 60 years to design an irrigation policy. Today there are many irrigation projects oriented toward "colonos" (colonists) and commercial

enterprises. Fruit, vegetables, beans, cotton, and sugarcane are being produced, and women and their children are increasingly being absorbed into such production activities. Frequently, dislocation from their families has loosened traditional family bonds and makes such women vulnerable in a market that offers low wages, unstable employment, unhealthy labour conditions, illegal contracts, no representation in union organization, and no child care facilities.

This work illustrates the many circumstances under which social opportunities, living conditions, agricultural modernization, environmental management, and the social reform processes may become deeply interrelated. Irrigation projects in the Brazilian Northeast represented a major environmental initiative geared to overcome drought, a factor behind persistent poverty and low productivity. As such, irrigation was a major factor in economic and social change. As irrigation took place in a context of high social inequality and discrimination, however, to which no particular attention was given, it could not provide the means to lay down the basis of real sustainable development. Irrigation may have contributed to overcoming drought, but its promise to help in overcoming poverty, discrimination, and the hardship of life is still to be met.

By publishing this work, IDRC hopes to provide policymakers, scholars, and community leaders with a more systematic knowledge basis for their continuing work and struggles. It is also expected that it will provide a more vivid description of the complex challenges that social reform will need to meet to alter fundamentally the conditions of profound inequity in which many women, their children, and families still live.

*Mario Torres Adrián, PhD
Senior Program Specialist
Social Policy Program, IDRC*

Acknowledgments

The coordinators offer their most sincere thanks to the women rural workers who gave up part of their scant time to provide the information on which this study is based and to Professor Tania Bacelar, Director of the Department of Economy, Joaquim Nabuco Foundation (FUNDAJ), who encouraged us to carry out this study and helped us to overcome administrative barriers; Professor Leonardo Guimarães Neto, Researcher in the Department of Economy (FUNDAJ), for his valuable advice in the survey; Professor Hans Dieter Heidmann, of the Department of Geography of the University of São Paulo, who acted as consultant when this project first started, and for his didactic criticisms of the research; Dr Mario Torres, Senior Program Specialist, IDRC, for believing in the fulfillment of this project, for his encouragement, and for the innumerable suggestions that contributed to enriching this study; Eva Rathgeber for her suggestions; Betânia Dávila, a member of the NGO SOSCORPO, for her information and participation; Maria da Penha (in memoria), a rural worker, for her experiences; Lourdes Luna, a member of the NGO Benvirá, who assisted in the Pilot Dissemination Course; Fátima Barroca, who typed the reports. And, finally, all those who, directly or indirectly, contributed to the conclusion of this study.

Project Team

Project Leaders: Izaura Fischer
Ligia Albuquerque

Consultants: Dieter Heidmann
Leonardo Guimaraes

Text Participants: Izaura Fischer
Ligia Albuquerque
Annette Slothouber
Helieth Saffioti

Research Assistant: Gilka Pessoa de Albuquerque

Data Collectors: Agadir Farias de Barros
Dilma Moraes de Oliveira
Doracy Melo
Ivanilson Rufino Alves
Jairo Albuquerque
Manoel Games Marciepe Neto
Sayanora Moraes Ferreira
Maria da Penha Teixeira
Maria da Conceição Dias Nascimento
Valdemir Pinheiro de Brito

Presentation

This study, undertaken by the Department of Economy of the Institute of Social Studies of the Joaquim Nabuco Foundation, was funded by the International Development Research Centre (IDRC) Canada. Its objective is to show the consequences of women's wage-earning in areas of the Northeast of Brazil that are undergoing a process of agricultural modernization.

Chapter 1, "Monetization of the Rural Women's Labour Force," deals with how women's "helping" is transformed into work, how women become wage earners, activities performed by women in agriculture, the organization of a typical woman's working day, the precarious working conditions of women, and the impacts on women's health.

Chapter 2, "The New Rural Family and Agricultural Modernization," presents the family context and its main features in the irrigation and dry lands areas to draw comparisons.

Chapter 3, "Rural Women Workers and Grassroots Movements," deals with the obstacles facing women who wish to participate in rural unions and women's groups. It shows how the state has supported women, from the creation of committees in ministries, during the New Republic, to the present. It describes some social intervention modalities experimented with during the study, e.g., a seminar, a pilot dissemination training course, and a leaflet for rural employers. Finally, the study provides a methodological annex and a bibliography.

The study was conducted at irrigation projects in the Northeast, created by the São Francisco Valley Company (CODEVASF) and by the National Department of Anti-Drought Projects (DNOCS). The selected projects are situated in the states of Alagoas, Bahia, Ceará, and Pernambuco. The sampling framework included areas of irrigation projects and traditional crop growing. The random sample included women workers and employers in the irrigation area. In the dry land area only a control group of rural women workers was interviewed. In addition to the quantitative data, qualitative information was gathered through in-depth interviews with women workers, employers, union leaders, and representatives of official agencies, nongovernmental organizations (NGOs), and agricultural cooperatives.

Introduction

Professor Helieth Saffioti

In ancient societies, women, except for those belonging to the elite, apart from carrying out domestic work, were involved in crafts and agriculture. Although women took part in diverse activities, the tasks they performed were not considered as social labour. This conclusion is based on the concept that social labour is only remunerated labour. Thus domestic labour, being considered nonsocial, permeates all types of societies, whereas wage-earning labour is specific to the mode of capitalist production.

With the advent of capitalism, part of the labour force, including a certain number of women, became wage earners when they were absorbed into offices, factories, agriculture, etc. In the capitalist mode of production, new factors of changes are introduced into the work process. Added to these are technological advances, propitiators of innovation in the social division of labour, especially in its technological dimension. De rigueur, there exist various types of social division of labour (Marx 1959). There is that which separates sellers from buyers of the labour force; workers in agriculture, industry, and the service industries; specialists in highly detailed operations within a single work process from each other. In addition, there is the sexual division of labour existing in all societies, although its content manifests differently.

In Brazil, during the Empire, men held all preschool teaching posts and society resisted intransigently women's penetration into this occupation (Castro n.d.). When the first "ecolas normais" were founded, women who studied were considered prostitutes. As the sexual division of labour is social, and not natural, it is in permanent mutation. Thus, for many years, not only has teaching through to the 8th grade been almost exclusively performed by women, but also the phenomenon of the feminization of high school faculty has occurred as well as in some areas of tertiary education.

At the same time, the severe decrease in wages has occurred when women have entered an occupation. It is not totally true that women's entry causes the lowering of salaries. All the evidence indicates that the two phenomena occur simultaneously. Men, because they are considered by society as the providers of the family, are always looking for better salaries, whereas women, de facto responsible for this family concern and for whom fewer doors to opportunities are left open, are always seeking new areas to turn their occupational training into jobs, although these areas offer precarious working conditions and wages.

In agriculture, until a few decades ago, women only worked under the regime of small-scale production (Marx 1959), known as "family economy." This kind of organization of economic activities has different forms. It may refer to peasants, that is, small-scale landowners who make up the true small-scale mode of production. Women worked as the other members of the family, there being a head, a patriarch, who shopped for the products of consumption with

the wherewithal gathered from the sale of the "surplus," and who distributed it internally to the family group. The patriarch's role was to protect his wife and children from the outer world.

Under this production scheme, the labour force is the family. With the arrival of capital into the countryside, the rural worker, as well as the urban worker, loses his control of the work process, and becomes a seller of his physical labour. The head and the other members of the family, independent of their sex, come to enjoy the juridical freedom and equality necessary to enter into work contracts.

A detailed history of the proletarianization of the peasant is beyond the scope of the present work. Nevertheless, it is important to know that the expropriation process, which was different in each country, is responsible for the separation of the worker from his means of production, particularly the land. The peasant is obliged to sell his labour to produce daily and raise offspring. The primitive accumulation process happened via expropriation of the peasant in agrarian societies of Europe. In accordance with historical evolution, this process has happened and still takes place in Brazil. The battles of those without land — the "sem terra" — reveal the presence today of the expropriation process.

The process referred to is obviously slow. The small landowner begins to derive a salary on another person's property for part of the year, although this usually demands a long migration to supply the necessities that cannot be satisfied on his own exhausted land. There exist regular migratory flows of men coming from certain regions of the Northeast to the State of São Paulo during the sugarcane cutting season. Recently, many women have taken part in these migrations. Women from dry lands, however, remain in the Northeast, looking after the family and their piece of land, which provides certain food supplies.

The entry of capital into the countryside brings contradictory consequences for women. On the one hand, it produces deleterious effects on their health, but, on the other hand, it diversifies their job opportunities, and their opportunities to acquire new knowledge, thus making them aware of their problems, and setting them on the path of liberation struggles.

History, however, cannot be thought of as being linear, on the supposition that the capitalist mode of production will destroy all forms of production that historically preceded it and that coexisted with it. Strictly speaking it is not a question of precapitalist forms of production because not only have they had their content entirely redefined as a result of the market but also there are very often new forms or combinations of age-old forms of subsistence.

In production forms coexisting with capitalism, there stands out the peasant family, living exclusively from the products that are extracted from their land, and the family that owns a small tract of land that is insufficient to provide subsistence living and whose family head or other members become wage-earners to complement the monthly income. More important, the production relations of these two types of families are different.

The second type of family has been subordinated to capital. Very often, the roles assumed by the agricultural worker, male or female, show his or her diverse production relations. He/she

can be direct producers on their land, partners in the production of maize, and wage-earners during the cutting of the sugarcane (Loureiro 1977). Different production relations are, therefore, combined in one person because he/she works in activities organized in a nontypical capitalist mould and also in activities organized in a typical capitalist way.

These two types of organization of economic activity, therefore, should not be considered sealed off in watertight compartments. The very same male or female worker can maintain distinct social relations of production through his/her multiple links to work. The "parceiro," an independent agricultural worker, performs work-activity without any employee relationship, whether legal or *de facto*; whereas a wage-earner carries out a work-activity in an employer-employee relationship, whether or not his labour card has been filled in, as happens in the Northeast. Employment presumes the complete separation between the worker and the means of production. Now, whereas a peasant holds the ownership of land and instruments of work, a "parceiro" does not retain the possession of the land and the instruments of work.

For the process of proletarianization to take effect, dispossession must be completed. This does not mean, however, that once a proletarian, the male/female worker cannot return to devote himself/herself to activities organized in a nontypically capitalist way. Thus, it is preferable to think of the two types of economic activities not in terms of sectors, but as activities that get intertwined just as much in urban as in rural areas.

Moreover, an intense dynamic is maintained between capitalist and noncapitalist economic relations. Brazilian newspapers recently reported on a new approach in capitalist firms. On paper, they fire an employee but he continues working in the same firm without a labour card, receiving unemployment benefits and earning his wages. While the employee loses the benefits guaranteed by the labour card — 13th monthly wage — holidays, paid sick leave, or maternity leave, etc., the employer stops paying all tax contributions related to the worker's job. This unemployed yet working employee has created a new form of economic activity that, without entirely slotting into typical capitalist patterns, takes place in the capitalist area, the enterprise, and has no similarities with any precapitalist activity.

Apart from this procedure, São Paulo enterprises offer a number of monthly wage payments to male/female workers who volunteer for redundancy. Many have declared that they would return to the Northeast with the intention of buying a small piece of land to work on. In this way, the flow of labour from one type of activity to the other is intense and in both directions. At a time of such deep economic crisis as the present, the volume of those who are living at the expense of nontypical capitalist activities is growing. This phenomenon is occurring all over the world, especially in underdeveloped economies.

The proletarianization process of women does not occur in the same form as for men as the majority of women are responsible for the education of their children and for the well-being of their husband. How can the female worker become a proletarian in the same way as the male worker if she does not assiduously attend the meetings of her trade union, does not participate

in its management, and does not march shoulder to shoulder with men in the battles for better salaries and better working conditions? It must be considered that, if women manage to get a job with wages greater than those of her male companion, she puts at risk her conjugal relationship for, traditionally, it is up to the man to provide the material necessities for the family.

The labour market, however, is not homogeneous, for it contains dominators and dominated. This is not only a question of ideology but of practices differentiated according to gender. Once again the abstract logic of capital speaks for itself. Capital should see that all labour forces are equalized. In this sense, the entrepreneur would not be interested in the worker's sex but greatly in his/her performance as a work agent. Yet this is not what happens. In general, women perform the worst tasks, receive the lowest wages, and very often accept the worst working conditions, including nonemission of labour cards. These discriminating capitalist practices aim perhaps at extracting greater profits from the female workforce. Furthermore, women subject themselves to this treatment because of their families, necessities, and the limitation of job opportunities.

In the current, longstanding economic crisis, the number of women supporting households is large. One is not speaking about heads of family, whose number already exceeds 20%, but to women who live with their unemployed male companions. There are indications that conjugal violence has increased due to the deterioration of the male status as a provider. Doctors' and psychotherapists' reports indicate a greater incidence of sexual impotence among unemployed men. Certain changes in family organization, imposed by the economic crisis, are not being absorbed by men who have grown accustomed to deriving their power from their wages.

Although women are discriminated against in all labour markets, they enjoy wider opportunities in the urban economy than in the rural economy. This phenomenon represents a disadvantage for women rural workers. Another negative factor is the total absence of community services in the countryside, which creates serious problems, such as looking after children. The rural woman worker has specific difficulties that must be mentioned.

There was great similarity in income distribution between the urban and rural populations, according to preliminary tabulations of the 1980 Census. The urban poor were in worse conditions than those in the countryside. Whereas the poorest decile of the urban population of more than 10 years old, with some income, acquired 1.1% of national income; in the rural zone, the same figure was 2%. Considering that the rural population was much smaller than the urban one, these data become even more significant in differentiating the contingents of poor people in the two areas. In the next decile, the income acquired by city dwellers was 2%, whereas those in the countryside acquired 2.9%. These differences continue up to the sixth decile, after which rural dwellers begin to lose ground.

Thus, in the richest decile, city dwellers acquired 47% of the income, whereas rural people had 43.7%. More important than the differences in purchasing power between urban and rural dwellers are the economic inequalities within each of these areas. The comparison between the

income acquired by the poorest decile and the richest decile reveals an aberrant distribution. The Gini index changed from 0.565 in 1970 to 0.580 in 1980. These data, however, do not reveal the regional inequalities that separate the country into at least two worlds, the poorest of which is made up of the North and the Northeast.

Brazil still has an enormous male and female working population in agriculture. Agricultural enterprises have expanded due to the export-led types of monoculture and the fiscal and credit policies. In 1980, 58% of food products in Brazil were produced on properties of less than 100 hectares, whereas only 12% was produced on properties with more than 1,000 hectares (Miranda Neto 1982). Although recent data are not available, it is estimated that the situation has not undergone any improvement. On the contrary, given the advances in the process of the concentration of land ownership, it could even have become worse. This hypothesis is based, among other factors, on the accelerated migration of workers from a family economy to a wage-earning regime in agriculture, affecting women in particular.

Although the percentage of wage-earning men is far higher than that of wage-earning women in agriculture, what is striking is the faster rhythm at which women abandon family production for wage-earning activities of the capitalist agrarian enterprise. This movement of the female agricultural labour force brings negative consequences to the food diet of underprivileged classes of the population (Saffioti 1985). Furthermore, women have reduced or eliminated the hiatus of productivity existing between them and men, which reveals the contradictions brought about by the absorption of women into activities organized in typical capitalist patterns (Boserup 1970; Rubbo 1975). Modernization in agriculture has brought certain consequences:

- The decline in the per capita availability of food, which is accompanied by a hefty increase in prices for the urban consumer;
- The noteworthy growth of work productivity, part of which is distributed to workers in the form of wages;
- The great increase in seasonal agricultural employment, which has provoked an increase in unemployment and/or underemployment;
- The substitution of family work by wage-earning work, with a heavy growth in the number of temporary nonresident workers, the "boias-frias" (packed lunch brigade);
- The discreet reduction of the income inequalities between the rural and urban sectors and a strong increase of these inequalities within the agricultural sector; and
- The significant change in the composition of the agricultural product on account of the accelerated rhythm of growth of modern crops (for export and industrial raw materials), with a notable decline in the production of food (Saffioti 1985, p. 35).

One of the most serious problems in capitalist agrarian enterprises is monoculture. This increases seasonal agricultural employment, thus leaving millions of workers unemployed during

the rest of the year, contributing to the exceedingly high percentage of rural workers without a registered labour card. PNAD (1989) reports 79.5% of rural workers as not being enrolled, which represents 78.8% of men and 83.8% of women.

Even if the family can afford not to have its women working, rural employment, independent of sex, does not last a year because of the increase in seasonal agriculture arising from modernization. The increase in temporal male or female workers that marked the 1960s and 1970s has not been observed. Many male and female workers are contracted, but as permanent workers.

Gender affects the conditions of integration into the labour market. Women are subjected to lower salaries than men. Among the workers who receive up to half a legal minimum wage, in the Northeast, women account for 57.6%; this falls to 40.2% in the earnings band between half to one minimum wage. Likewise, women workers with more than 20 minimum wages represent only 14.0% of the total.

The transformations provoked in the family by the expansion of the capitalist mode of production in the rural zones — the transition from the extended family to the nuclear one — has made women's work more difficult. Although in the family economy she may perform two different tasks in a day (production and reproduction activities), in the agrarian enterprise there is no room for domestic activities such as caring for children or preparing food.

Due mainly to the characteristics of organization under this method, women workers very often are not individualized; although working for a wage they can be victims of all kinds of phony contracts. Even in the state of São Paulo where agriculture has reached a high degree of modernization, the woman's wage is included in her husband's (Saffioti and Ferrante 1983).

The nuclear family, therefore, does not always come across an organization of work suited to the individualization of the wage-earning process. The family has stopped being a unit of production because each of its members has integrated into one or more types of capitalist organizations. It has been shown that this integration can be full- or part-time by the male or female worker performing other activities under another organizational scheme.

The family, however, continues to be a unit of consumption. The income that each of its members obtains will make up the family budget and define the consumption level for the family. Gender impinges on how this budget is shared. In very poor families the best-fed person is the male adult worker, generally the father or husband. If the woman takes part in social production, she may be the second in this order of priorities. Nevertheless, this order of preference is not always assured by professional performance. Frequently, it is male children who come in second place, and the wife and daughters are last.

The exercise of an occupation by a woman does not necessarily guarantee her a change in her position in the family. The power of the male is greater in the society, so much so that there are many cases of women with some economic autonomy yet with no emotional independence or any degree of freedom, whether in the education of their children, participation

in union meetings, or in the development of social relationships with neighbours and/or work colleagues. On the one hand, modernization in general, and in agriculture specifically, provokes profound contradictions in women's lives and sharpens other existing contradictions. On the other hand, it eliminates or reduces the necessity for physical labour, which has turned women into a human resource in practically all activities.

This question of physical labour should be highlighted. It is true that women, in general, are not as strong as men. She is not, however, stopped from taking certain jobs that are considered heavy. The idea of women being fragile has not only been taken for granted in the male consciousness but also in the female one. After carrying out a survey in the rural zone, it can be stated that women are undertaking work that demands a lot of physical force, such as wielding the mattock in hay fields and the sickle in sugarcane cutting.

Meanwhile, they reproduce the dominant ideology; that is, they carry out heavy jobs they call "men's work." The same happens with domestic chores. There is the false idea that this type of labour is light. For women in the urban zone, some jobs are heavy, such as scrubbing the floor or washing clothes by hand. For women of the rural zone there exist even heavier chores, drawing water from the well and carrying it, washing clothes in the river, and chopping wood.

Electrical equipment, which makes domestic chores lighter, is beyond the reach of these women workers who do not even have access to electric energy. Water utility installations, including the provision of treated and piped water, which goes a long way to facilitating the housewife's work, are scarcely accessible to a considerable number of Northeastern rural women. There is, therefore, a need to change the ideological myth of female fragility.

Until discussion led thinkers beyond simple notions of equality and inequality, the theoretical and practical field of action was tremendously limited, and very often led to impasses. With specific differences being taken into account, the conquest of liberty seems closer and wider. The most basic human rights, however, are not guaranteed, those that respond to necessities such as food, health, education, public safety, etc.

Beginning at a more primary level, not even life is assured, whether by means of adequate material conditions for existence, or by not fighting the impunity of the murderers of those male and female workers who trudge on to survive. The burden of the rural worker is not light, especially for women. She is violently discriminated against, independent of the technology adopted in agriculture. In this sense, to modernize does not mean to bring benefits from the use of advanced technology to rural women workers. It means to work harder, have a longer working day, be more vulnerable to illnesses, and have a relatively premature aging process.

Chapter 1

Monetization of the Rural Women's Labour Force

Introduction

As mentioned, the penetration of capital into a society does not take place either in a linear or instantaneous way. It starts finding places for itself according to its greatest objective — increasing its profits — by innovating strategies or preserving those adopted, for example, by the patriarchal system when it suits it. At the same time, the practice of capitalism promotes social, economic, and cultural changes. In the rural setting of the Northeast, these changes are visible in areas of "sertão" (semi-arid lands), where crop-growing irrigation has been introduced, the model of modernization currently taken by agriculture.

Subsistence farming (of maize, manioc and beans), predominant in the Northeast, has to meet the family's needs as its principal objective. It is adopted by the small-scale landowner¹ and the worker on ceded land who raise their crops under the traditional pattern, using no modern mechanization and depending on rains. The labour force employed in its production is the family.

The producers who generate "surpluses" share their production with the market and may contract workers who are generally taken on as partners. The commercial growing of crops, predominantly monoculture, uses (in contrast with) subsistence farming, machines and equipment and gives priority to a wage-earning labour force. The growth of these crops is generally performed by rural entrepreneurs, who have their own financial or state-subsidized resources available, and by colonists settled in official irrigation project areas.

The entry of capital into the countryside further generates changes in the social relations of production. In this way, by the practice of irrigation, those living on lands are transformed into wage-earners as are the "parceiros." Those living on the land are thrown off because the landowner needs it to extend his production area, whereas the "parceiro," whose production is guaranteed by the practice of irrigation, loses importance in traditional crop growing in dry lands. In drought areas, contract work prevails because the landowner divides or totally passes on to his "parceiro" the habitual risks and losses of production, which is a characteristic in the Northeast.

¹In this study, a small-scale landowner is the farmer owning up to 50 hectares of land, with or without a partner or separate income.

In this context of changing social relations of production that together lead to a dominance of wage-earning jobs, the presence of the woman can be observed as a new figure of remunerated labour. The mechanization of agriculture opens employment to women that was reserved for men. The participation of women in this labour market leads to the breaking of cultural values, for the rural patriarchal system did not permit women to sell their labour force. Working for the family, without remuneration and under the command of father, husband, or brother, is usual in the Northeast rural areas, where, capital being in short supply, the use of traditional cultivation techniques is necessary.

The participation of women in remunerated work in irrigation areas is accompanied by a series of changes that affect their lives. Such transformations lead to the lengthening of the working day, monetization of their work, awareness of their rights in the public and private sectors, exploitation of their performance of agricultural activities through job specialization, compromising of their health, and political participation. These modifications promoted by the penetration of capital into the countryside, oppose philosophy of capital when they discriminate against women, which aims at obtaining a profit independent of gender. Thus, in the area studied, when capital absorbs women's labour, paradoxically it uses strategies adopted by the patriarchal system to attain its objectives.

Women's "Helping" Transformed into Work

In Brazil, the entry of rural women into remunerated work becomes a reality from the moment agriculture is mechanized. Although the participation of these women has grown considerably in the wage-earning category, 88% of them are still to be found among the "nonremunerated members of the family" (1980 Census of Agriculture and Cattle-Breeding Areas).

In the Northeast, the situation is no different; the majority of rural women workers "help" the family in its agricultural activities without financial compensation. In this region, the unpaid nature of women's work can be justified, for example, by the importance of farming the dry lands, which generally operate on a small production scale of subsistence farming. Apart from this, farming the dry lands depends exclusively on rains and manual work and, because of the scarcity of employment, when remunerated, priority is given to men.

In contrast to farming dry lands, the irrigation technique operates in most cases in large-scale production, with commercial crop growing and a wage-earning labour force including women. In this way, the study reveals that, of the total number of women farming in dry lands, 87.5% "help" the family, whereas in the irrigation areas only 8.6% of women work for the family without receiving remuneration. These women work on family owned pieces of land or help family members who take on piecework jobs on the land of third parties. On becoming wage

earners, rural women work in the "outside world," at the same time abandoning, totally or partially, family agricultural work.

The integration of these women into the labour market represents a cultural break, because women have not traditionally worked for others, but for the family under the command of father, brother, or husband. It is the understanding in this family, commanded by the man and strongly based on the principles of the patriarchal system, that women should not work for third parties, as this facilitates contact with the opposite sex. In addition, women do not believe they have the physical strength to work far from home as they will be permanently ill. Although the vulnerability of these women is undoubted, it equally affects male and female rural workers.

Taking another look at women becoming wage earners, what prevents women from becoming integrated into the labour market is the absence or scarcity of capital instead of the reasons presented by the traditional rural family. The role performed by women in agricultural production of dry lands is considered by the family as "help," due to their uncertain participation in activities naturally carried out by men, or to the reduced number of hours dedicated to agricultural work, despite the fact that, on average, these women work for more than 8 hours a day in these activities.

The flexibility in the work timetable allows women to conduct agricultural work along with those domestic duties historically performed by women, without increasing the working day, although women do need to reduce the time they spend caring for the family. The points raised above serve to flesh out the "help" that women supply to agricultural production. As its most notable characteristic is the absence of remuneration, from the moment help is transformed into a tradable element, it is automatically labelled work. The women's labour force becomes merchandise when the capital enters the countryside. A study carried out by the Brazilian Institute of Geography and Statistics Foundation (FIBGE) shows that the participation by women workers is proportionally higher in the areas of most advanced agricultural mechanization, as occurs in São Paulo, where women make up 26.7% of drivers (FIBGE 1989).

Capital, as was verified in the surveyed area, initially attracts women belonging to families who have no land and, according to its need to expand capital, motivates women belonging to low-income groups, for example, women from families of small-scale rural landowners and women from other municipalities of the state and other states of the region.

The rural woman worker becomes engaged in the labour market to increase the family income and to guarantee the survival of the family. In fact, extreme poverty demands that every single member of the family contribute financially. At the same time, this necessity is felt as much in the dry land areas as in the traditional crop growing areas.

Given the absence or scarcity of capital, however, women only "help" the family in agricultural duties. For this reason, these women do not perceive that it is capital that determines their participation in the labour market. The transformation of "help" into work, which takes place with the advance of capital in the countryside, brings other modifications in the rural

environment. Thus, the practice of irrigation strengthens the wage-earning work relationship, which displaces the "parceiro" relationships in the Northeast "sertão" (semi-arid area). Wage-earning is, par excellence, the preferred work contract by the capitalist as it makes the largest profits possible by a greater extraction of value-added from the worker.

Making Women Wage Earners

With the introduction of irrigation in the Northeast, women become wage earners. Wage-earning contracts can be temporary or permanent, and the choice between the two categories will be made by the owner of the means of production. Thus, in the irrigation areas visited, enterprises with more than 1,000 hectares, considered here to be large firms, use permanent workers given the systematic volume of work, although they also contract labour at the peaks of the growing cycle.

The small colonist, however, who possesses around 10 irrigated hectares, or an allotment as it is known in the Boacica project, uses family labour and almost always contracts the services of third parties on a temporary basis at the peaks of the growing cycle. This irrigation farmer does not contract workers permanently due to his low capacity to accumulate capital. The few entrepreneurs who manage to carry out this type of contract choose male workers. They only accept women under very special conditions, according to one colonist interviewed who revealed he had four permanent workers on his property, one of whom was a woman because she had a tremendously high productivity. He called her "my tractor."

The agricultural firms surveyed with more than 1,000 hectares demonstrate a clear preference for male workers, as 70% of the total of permanent rural workers are men. Inversely, they prefer to contract women as temporary workers. In these enterprises, 97.7% of the women interviewed stated they had permanent contracts, although about 60% of them had worked for less than 6 months in the same enterprise.

In reality, the majority are hired for stages of the agricultural growing cycle and are thereafter released by the enterprise, which, depending on the performance of the woman, will later hire her again. This is consistent with cases observed where during a single year women were called to work up to three times by the same entrepreneur. The women workers whom the enterprise considers as the most efficient keep their jobs.

Although this contract is not, de facto, of a permanent character, because its length is predetermined, it is understood as being so by the women workers whose labour cards are signed when they are taken on. A total of 93.7% of women workers who said they maintained this type of contract declared they were formally registered and received the equivalent of US\$49/month, an amount equal to the national minimum wage.

The permanent women workers of these enterprises, although they receive the lowest legal wage, are obliged to fulfill daily tasks in the same way as those who have temporary contracts. In these activities, the wage, calculated on a daily basis, may actually be less than the minimum,

for it implies the lengthening of the shift without extra remuneration. According to the women interviewed, permissive supervisors allow the service to conclude on the following day without any bonus for women. Male workers hardly ever receive an assignment of this kind because the activities carried out by task are generally the responsibility of women.

The seasonal nature of agricultural work in the Northeast persists in localities undergoing modernization in exactly the same way as in areas of traditional crop growing, as is shown in Table 1. It was verified that in the irrigated areas of the Northeast 69.9% of women rural workers interviewed remain employed for 12 months, although not necessarily by the same entrepreneur. A similarity has been confirmed in studies carried out in Chile and Paraguay in areas of commercial agriculture. In these countries, about 70% of women work throughout the year (Aranda 1982).

In the area surveyed, possible reasons for the interruption of work are the existence of monoculture or the coincidence of cycles of different crops. At the same time, the survey shows that the lack of employment of the rural woman worker in irrigation areas is influenced more by the coinciding activities than by the existence of a single crop.

Table 1. Women workers in irrigation and dry land areas engaged in agriculture, 1988 (percentages).

Months	Employed Women Workers	
	Irrigation	Dry lands
January	66.3	74.1
February	63.9	77.6
March	62.4	88.0
April	61.9	83.1
May	64.6	86.9
June	62.1	83.3
July	65.8	79.3
August	69.4	80.9
September	78.0	71.9
October	80.8	71.4
November	81.6	78.3
December ^a		

Source: FUNDAJ Survey (1988/89).

^aMonth in which the fieldwork took place.

Thus, in the monoculture of rice, adopted in Boacica, the highest unemployment rate of women workers in the year of the survey took place in the month of July with 28.1% of those interviewed. At this time, planting, the activity that absorbs the most women, was at a low level. Likewise, the exclusive growing of sugarcane in Agrovale in March is the explanation for 28.3% of the highest unemployment rate of women workers. The data reveal, however, that in Frutivale and areas surrounding Moxotó, which simultaneously carry out the growing of various crops, women's unemployment in agricultural activities rose to 52.9% in the month of January and to 49% in July. To survive in the periods of agricultural unemployment, these women perform services such as washing clothes, working as maids, or helping their family.

The temporary work contract that predominates in small agricultural enterprises is carried out through piecework or task production and on a daily rate basis. In piecework, in which the measures used are the task or "vara" — a unit of measurement that corresponds to 1.10 m — the male or female worker agrees with the employer to carry out the service in a certain period of time and at an agreed price. This type of contract seems to satisfy both parties.

On the one hand, the male or female worker has an interest in carrying out the service in the least possible time to be able to take other contracts. In addition, from the point of view of some women workers, piecework as well as contract by production are freer because the worker is not supervised and is allowed to stop working when he/she sees fit.

On the other hand, the employer wants the work to conclude rapidly. Piecework is usually performed in activities that are considered urgent (where there is a risk of production losses), such as planting and harvesting, activities that are always performed by women. Thus, 73.7% of women workers interviewed in the rice-growing area in Boacica stated they were doing piecework. In the same way, the planting of tomatoes in Moxotó is carried out by piecework contracts.

In the work contract by volume of production, the employee is remunerated according to the physical effort made. The agreement is normally made before work starts. This contract is widely used in tomato picking in the irrigated lands surrounding Moxotó, and the measure adopted is the number of boxes collected. In the same way, beans grown in the irrigated lands surrounding Morada Nova are harvested by this production method. In this case, the measure used is the number of sacks collected.

Daily payments for work in the irrigation areas reach 34.8% of the total workers contracted. At the same time, only 5.5% of women participate in this type of work and they consider it to be the worst type of contract because of the exploitation by the employer who, by constant supervision, demands the maximum of their performance. This type of contract is not used very much because the employer only adopts it for activities that take little time, for example, spraying agrochemicals, which is done exclusively by men.

In the dry lands, in contrast to the area undergoing modernization, according to the survey data 80% of women who sell their labour have a daily rate as their form of payment. The work

contract happens casually, because the basic labour force is the family, which is sufficient to meet the needs of small-scale production. Among the forms of remuneration identified in the area, the daily rate shows the greatest differences in work value by sex. Thus, in the irrigated areas a woman's average daily rate is US\$1.5, whereas a man's is US\$1.9 for carrying out the same tasks. In the dry lands, the differences are greater where women receive half of the men's daily rate.

The preference of these rural women workers for the work contract is associated with the option that it is offered to them. Thus, women interviewed in the two largest firms covered by the survey prefer "permanent wage earning," the method of work that absorbs almost all employed rural women workers. In the same way the women of Moxotó and Boacica seek temporary wage-earning jobs, the contract that predominates in these projects and is preferred. What is responsible for the preference of these women for both types is, according to the women interviewed, the gain that wage earning brings.

Moreover, the data reveal that 42% of the dry land women workers choose to help the family, without receiving remuneration, as the best work relationship in agriculture. In their opinion, when working for the family the profit stays at home and they are more autonomous, free of the otherwise, ever-present boss figure. This allows for greater mobility from home to the farm land and vice versa, which facilitates domestic activities.

Another type of wage-earning job observed in the area was work by task. This form of payment, according to specialists interviewed, is determined by the average production of workers in the area. For women workers in irrigation, the amount of work demanded by the enterprise in the task is absurdly high. According to the women interviewed, a group of employees in the enterprise, in an attempt to reduce the task, decided not to carry out the service to demonstrate the impossibility of performing what was demanded. As a reward, all of them had that day's work deducted. The statements made by the women workers interviewed reflect the difficulties they face when carrying out the established task:

I can only manage to finish the task if I really work hard and don't eat. Sometimes I don't manage to finish the task and some supervisors count my hours of work and the next day I have to finish it before beginning what's due for that day. (Sugarcane woman worker)

When I work by task I don't always manage to finish it on the same day. When I do manage, I go home at 2 o'clock in the afternoon. When we don't make it, they hang around until 4 or 5 o'clock in the afternoon so that we can get it done. (Sugarcane woman worker)

The supervisor really exploits women. He is at you all the time. Sometimes to get a task done, a woman shakes with fear and sweats. But he ignores this and tells them to get on with the task. (Sugarcane woman worker)

Women's Activities Where Agriculture is Undergoing Modernization

Brazilian agriculture is undergoing modernization in certain areas. This reality was observed in the localities visited that adopted the practice of irrigation. The use of this and other modern techniques responsible for changes in the productive process demand, contrary to the predominant traditional agriculture in the Northeast, the adoption of modern technology, machines, and equipment, along with chemical fertilizers and agricultural pesticides. In the dry lands area, the productive process is developed in a simplified manner and with few tools; usually a sickle, mattock, and axe.

The necessary stages in crop growing can be summarized as removing roots, making drills and furrows, and planting and harvesting. In these areas, the activities are undertaken by men, women, and children. Women take part in practically all the activities. According to the survey data, 36.2% of the women interviewed took part in harvesting, whereas 33.6% took part in planting, and 30.2% took part in clearing, weeding, and preparing the soil.

In irrigation, the machinery most used by the rural entrepreneur is the tractor (87%) followed by the planting machine, the mechanical plow, the threshing machine, the crop cutter, and others. The types of machines used vary with what is being grown and the capital available. The possession of machinery is associated with capital and represents one of the components of the firm's fixed assets. The use of this machinery, however, is necessary in farming that is being modernized. This is why employers with less capital rent these machines from private individuals or official bodies established in the area who are responsible for the development of agriculture.

The mechanization of agriculture carried out in the Northeast, as well as in other regions, has played a significant part in the maintenance of an employed workforce. Thus, according to the specialists, the largest rural farm, with a total area of around 12,000 hectares, of which 7,000 hectares are irrigated, possesses modern machines and more than 8,000 workers, about 2,500 of whom are full-time employees. Included are factory, office, and resident workers — the irrigation workers — who drive the machines for distributing water for agriculture. The remaining workers are rural workers who work "temporarily."

The permanence of a significant amount of workers in agriculture can be explained, among other reasons, by (a) the incipient technological stage in which agriculture finds itself in relation to developed countries; (b) the difficult economic situation of the majority of rural landowners, a fact that makes the use of advanced mechanization difficult because of the heavy investment required; and (c) the increasing availability of hands looking for work, a fact that favours low-paid work in general and especially in the rural environment. Lowering salaries reduces the cost of production, a basic capitalist target en route to greater profits.

The use of the human workforce, given the technological stage of Northeastern agriculture, was demonstrated by specialists in the area who affirmed that it was very unlikely

that the mechanization of the transplantation of rice in the lower São Francisco region would become a reality because of technical problems that came to light in trials made in that area.

The use of the human workforce can also be subordinated to machines for economic reasons, according to a study on sugarcane growing in São Paulo that affirmed:

that each harvesting machine does the work of more than 40 men. Despite the high performance of the machine, it does not replace the work of men because human labour is still relatively more economical even though the machine can cut between 20 and 25 tons of sugarcane per day and men, on average, 5 tons... (Rossini 1988).

A similar fact was found in the enterprise that grows sugarcane in the surveyed area. According to the information from a specialist in this firm, an attempt was made to substitute men by machines in harvesting. In his opinion, the experience was a failure because the mechanical harvester used, apart from being expensive, brought a lower "return" than men. The return to the manual process of harvesting is associated with the low cost of the workforce versus the high cost of machines.

Maintaining manual labour in the agricultural mechanization process favours the male worker as well as the woman worker, as she has found a place on the labour market according to what was observed in irrigated areas of the Northeast. In attracting women to wage-earning work, capital has taken advantage of such characteristics as the obedience, delicacy, and dexterity, which society expects from women to obtain more profit from them, as well as pressuring men into increasing production. Women, however, principally mothers, always accept the demands imposed by capital. They have a greater feeling for the survival of the family, despite the fact that the responsibility for providing the family's needs is theoretically the men's. As an illustration, a woman worker stated:

Men don't enjoy tomato planting. Women do it because on the day they go to market, they have the money to buy food for the kids. (Woman working in tomato growing)

In addition, women are more subject to the demands of capital because remunerated work in the rural area is traditionally up to the man to find. Consequently, women, as unstable participants in the market, feel insecure and so, to keep their jobs, they need to demonstrate, in production and quality, standards above those generated by men in the performance of each activity. The following statements demonstrate this in detail:

Women get their work done more easily. They are more obedient and do a better job than men. It's easy for men to find a job anywhere. But women need to impress, because jobs for them are not so easy to come by. (Women worker in multicrop growing)

Women have more courage to stand a full load of work. They go out on rainy days and men don't. Women get upset when their wages are lowered, men don't care. (Woman sugarcane worker)

My husband has already had his labour card signed in the firm but he only put up with work for 2 days. When he got home he said, 'God! I'm so tired. I've been working at this for more than 2 years.' (Woman sugarcane worker)

Men quit their jobs easily, whereas women stick at them through thick and thin because if they don't, they are fired. (Woman sugarcane worker)

There are places where men turn up their noses at work and women take over. Men can't do work that women do. They just last a month and ask for their wages whereas women keep on working. (Woman sugarcane worker)

Women are more interested in work. She puts her back into it more. (Woman worker in tomato growing)

Bosses prefer to work more with women because they produce more than men. They're also more obedient. In rice planting the land owner (colonist) lays down the planting distance and women get on with it. Men plant farther apart so they can fill the area stipulated. (Woman rice worker)

The idea that remunerated work must be primarily carried out by men is also fed by capital with the objective of pressuring women for a better performance. Although capital is becoming more widespread in the countryside, there is a strong tendency to the specialization of women's activities with a view to greater labour productivity, a fact that may enable women in the long run to become convinced of their importance in this labour market.

In the irrigation model studied, as well as in other modern practices adopted in the rural environment, agricultural activities take different forms in contrast to traditional farming in the dry land areas. The various work stages adopted by irrigation are a demand made by this agricultural technique as are the types of crop it favours.

In the surveyed areas, the activities developed in irrigation are common to all kinds of crop growing. Some, however, are exclusive to certain vegetable types. These activities are carried out by men, women, children, or machines according to their capacity to generate profit. Thus, women take part in almost all the jobs considered "lighter," whereas men are almost exclusively responsible for driving agricultural machinery, women are usually considered unfit for such "skilled" jobs as driving machines.

Children, however, like women, take on manual activities, but children take part in a more restricted way as they do not form part of the staff of large enterprises. These enterprises contract

about 50% of their workers on permanent wage-earning contracts, although work contracts are often for a limited period of time.

A brief description follows of the activities by work stages for some selected crops. The monoculture of *sugarcane*, carried out by enterprises of the Tourão project, conducts, among others, the following activities:

Fertilizing: This service is performed by men and women. It is the man's job to dig beds in rows and the woman has to put the fertilizer into the beds. When she finishes each row, the woman returns to the starting point to cover up the beds with soil, using a mattock or spade. The women are of the opinion that in this activity they do the actual fertilizing, the man playing a secondary role. When this activity is paid on a daily basis, men and women are paid the same, although the woman carries out two steps of the work and the man only one.

Planting: This is in practice a woman's activity. The man takes the seeds from the truck; the woman puts them into the machine-made furrows and covers the furrows (drills are made in the soil into which the cane seedlings are placed).

Burning: This is the man's responsibility. The burning of sugarcane foliage is carried out to make cutting the cane easier.

Cutting: Carried out mainly by the man, but the woman also does her share.

Furrowing and turning over the earth: This is done by a machine.

Weeding and weed clearing: This is carried out by women. The aim of this activity is to weed the plantations. It takes place when the cane is still green. The leaves, according to women, are as sharp as razor blades.

Gleaning or regathering: The job of gleaning, as it is known in the area, is carried out exclusively by women. As this activity takes place at the sugarcane grinding season, it is also known as grinding. Various groups of five women engage in gleaning. Groups stay behind the trucks that transport the cane from the fields to the factory (the canes that fall from the trucks are gathered up by the women, who make them into new bundles that will then be taken to the factory). As this activity takes place at the roadside, it is considered dangerous by women who point out that there are accidents and even deaths. The machine operator advises the woman to keep back a distance of 100 metres, sometimes, they do not obey for they need to be quick.

Removing fungi: Carried out exclusively by women. The object of this activity is to remove a black covering of fungi, known in the area as "carbon." This fungus is found in a variety of cane adopted by the surveyed firm. It is very carefully removed from the cane to avoid contaminating the others as it spreads very easily. The next step is to put it into a sack, which is then taken by a male worker who burns it.

Removing stones: This is an activity exclusively performed by women. The land on which the surveyed sugarcane enterprise has been set up is fairly rocky. Thus, when the machine furrows, stones start appearing. The machine can remove the larger stones but the smaller ones need to be gathered by hand, which the women do and place them in heaps, then put them into a container on the machines that take them to a place far from the cultivated area.

Irrigating the cane: This is carried out by men. The objective is to direct the water from the irrigation channel to the plantation. The activity involves manoeuvring a machine. Those who work at this job live on the property and are known as irrigators.

Given the innumerable activities carried out in irrigation, it was interesting to learn from women workers what was the best and the worst of the activities. In cane growing, the data reveal that the best job is harvesting, whereas the worst is weeding/uprooting/weed clearing, according to 77.1% of women.

Weed clearing is considered a cruel activity because it demands 12 working hours and is an activity requiring great care. This is because the cane, which is about the same height as a man, has sharp leaves that cause cuts and scratches to the women's bodies. Carrying out this activity becomes difficult in the rainy season because the work is then accomplished standing in water. The job of removing fungi is also one of the worst activities. Women hate it because of the damage it can cause to their health. Although weed clearing is considered the worst job of all, 43.4% of the cane women declared that they had engaged in this.

The classification of the best and worst activity according to the reports of the women interviewed is, for the most part, associated with the physical effort involved and the harshness of the agricultural activities. In addition, the financial need of the woman worker is an important factor when she links the quality of the activity to the type of contract established generating greater or lesser remuneration as exemplified by the production contract or the daily rate contract, respectively. Her judgment is also influenced by the greater possibility of women being absorbed into the labour market that, in the rural area, is represented by harvesting and planting.

Rice production in the irrigated perimeter of Boacica is the result of two annual harvests, one in winter and one in summer. The winter harvest has its planting peak in the months of April and May, whereas the summer crop is planted in October and November. Rice growing, like

sugarcane, requires various stages of manual or machine-aided work as was observed in the Boacica project. Among the activities carried out in this type of farming are:

Fertilizing: This is carried out by men and women together. The work contract is on a daily rate.

Planting: This activity is carried out by women. In Boacica, rice is initially planted in beds and later transplanted. Transplanting is carried out between 25 and 30 days after sowing. This task involves picking seedlings, storing them, and transporting and transplanting them properly. All these planting stages are carried out by hand.

Cutting: Basically, women are responsible for this work. It is done with the help of a machete. The contract is piecework.

Bundling: Women carry out this activity after cutting. The rice is bundled together in sheets.

Making bundles: Men do this job. The sheaving of rice is also known in the area as "doll-making." A sack of "dolls" weighs between 40 and 50 kg. The sack is carried by the man to the place where winnowing is performed. Earnings for this job are at a daily rate.

Handling the machines: This is an activity that belongs to men. The work contract is a fixed wage or a daily rate.

Spraying: This is an activity carried out exclusively by men. The worker's job is to spray the plants with pesticides.

Tidying up: This is done by men and women. Payment is at a daily rate.

Although women participate in various stages of rice growing, the best stage, according to women interviewed, is harvesting, which 57.6% preferred. It is, according to them, a light activity as it takes place on dry land. Weed clearing is, however, the worst of all, closely followed by planting. Rice planting, in the women's reports, is an arduous activity because the women must sink their feet and hands into the mud and contend with the constant risk of accidents. In addition, planting involves an uncomfortable posture. Women need to bend over and remain in this position until all the rice seedlings they are carrying under one arm are in the ground then, shortly after, they continue the planting.

Despite rice planting being considered a painful activity, according to women interviewed it employs the most women. The peak for contracting women workers to do this job occurs in May. At this time, 65.6% of women interviewed are planting, whereas 27.5% are harvesting.

Inversely, in the month of February, 52.6% of women work on the harvest, and 40.7% do planting.

Rice growing in the Boacica project is not carried out simultaneously in all the project's plots, in contrast with other irrigated perimeters of the Northeast that concentrate on a single plant type. According to a specialist on the project, this is due to the limited amount of agricultural machinery available, which is state owned and rented to the colonists.

The limited number of these machines forces the irrigators to begin the agricultural process at different times so that everyone can use the machinery. This year-round, crop-growing procedure, coupled with the possibility of two annual harvests in flooded areas, permits women to maintain themselves in remunerated activities for a greater period of time. This is in contrast to the experience of women in tomato growing, as will be shown later.

There is relative stability in women's work in Boacica, although they commonly work hard for various irrigators, a fact proved by the survey data. The study reveals that, at the height of planting, 65.6% of these women are employed in this activity, whereas in the month of February, a time when women take less part in growing, the level is 40.7%. The same is true in harvesting where the maximum absorption of women workers is 52.6% and the minimum 27.5%.

In rice growing in Boacica, aside from the work of women, men, machines, and child labour is also used. The presence of children was mostly observed helping their mothers to accomplish activities when the latter are contracted on a piecework or production basis. The participation of women in rice-planting activities is not always permitted by the Northeast irrigation projects as was stated in the irrigated perimeter of Morada Nova. In this area, women are not present in production of rice, the predominant crop in the project.

In Morada Nova, planting is carried out by men or machines as are the other stages of growing. Women are not included for rice production because it is considered too heavy for them according to local rural entrepreneurs.

Obviously, this justification is not convincing, as the well-known logic of capital is not human well-being but profits. The allegation that women do not have the physical strength for certain activities occurs only when capital does not see advantages in hiring them, otherwise they are used regardless of physical capability.

Thus, in this project's area women are responsible for the harvesting of beans. This activity, according to women, is exhausting because it is generally done with a bag hanging from the shoulder where the bean pods are put.

Depending on the "disposition" of the woman worker, harvesting can exceed 50 kg of beans per day. Also, women in this area are contracted by colonists to prepare daily meals for the workers. Payment for this service is made at a daily rate. The practice of irrigation in Morada Nova has reduced the use of manual labour because there the planting is also carried out by

machines. Men, at the option of capital, have become responsible for manual work because of their experience in planting, which makes them more productive in their work.²

Tomatoes, the temporary crop that prevails in the irrigated perimeter of Moxotó, generates a single annual harvest, which is gathered in the months of October and November. The tomato production process occurs almost simultaneously throughout the project.

This phenomenon of a simultaneous process in all the irrigated lands, along with the single annual harvest contributes to the lack of continuity of annual work, in particular for women, and it is this feature that interests this study. This was confirmed by the survey that shows 11.3% and 82.3% of women interviewed working in tomato growing in the months of February and November, respectively.

Tomato growing involves various stages, which are done manually or with the help of machines, for example:

Picking: This activity is entirely carried out by women. Men rarely participate in this work. The tomatoes are collected in the skirts of the women, in basins, large cooking pots, tins, or baskets. Then they are put into boxes that weigh 25 kg. On average, a woman collects 30 boxes of tomatoes daily. Payment is made by production according to the number of boxes filled. The harvest price varies according to planting conditions. When the plantation is "dirty," with many prickly weeds, the rate of pay per box is about US\$0.18; when it is "clean," with fewer such weeds, the pay rate falls to US\$0.13.

Transporting the merchandise: Taking the boxes of tomatoes (which are carried on the head) from the area to the place where they will be transported is done by men. Sometimes the very woman worker who has picked the tomatoes also carries out this activity, which is paid by production. In this case, the pay rate per box is doubled.

Spraying: This is exclusively a man's activity. The colonists refuse to carry out this activity and contract third parties. Payment is made at a daily rate. The value of the daily rate for spraying is always higher than all other activities due to the scarcity of workers willing to do this service given the health damage that the poison provokes.

Pruning: This is done by men and women, with the preference being for men. During the growth cycle three prunings are necessary. The daily rate is the most common form of payment.

²Before the Morada Nova project was set up, women worked in rice growing without remuneration. With the project, women went to look for work in other agricultural crop-growing areas. Those women who belong to the colonists' families, as a question of status, now rarely engage in agricultural activities.

Planting: Tomato planting in Moxotó, which is the responsibility of women and machines, is divided into two steps. The first step, sowing, is normally undertaken by machines, whereas the second, transplanting, is carried out by women. The work contract is by the number of furrows planted.

Transplanting takes place on dry land. It is an arduous activity for it demands that the person remain bent over the whole time. It is typically a woman's activity, as men, whether they are rural workers or entrepreneurs, allege they "feel pains in their backbone."

In tomato growing, of those activities carried out by women, picking was elected the best by 71.3% of those interviewed. This preference is related to the opportunity of receiving greater earnings as the form of payment adopted is volume of production, remuneration depending on the "effort" of the woman. This is what one woman reported, stating that she managed to get 100 boxes of tomatoes collected in 12 straight hours (from 5 am to 5 pm) of work, which made it possible for her to earn US\$3.90. If the contract had been made at the daily rate, however, with fewer working hours, the woman would only have received US\$3.70.

Despite tomato picking being the number one choice for most women, it is painful, because they are obliged to breathe in the poison that is sprayed on the crop a few days before this activity begins. In addition to being considered the best task, picking involves the greatest number of women workers according to information provided by 82.3% of women interviewed. The peak of women's participation in this activity occurs in the month of November. During this same period, only 5.9% of women are working in planting. Inversely, in the month of February, 66.1% of these women keep planting, whereas 11.3% are picking.

Pruning is considered by 44.1% of women to be the worst task because it is laborious and the payment method is the daily rate. The work contract is restricted to 2 or 3 days, which reduces the possibility of earning, whereas planting and picking require women to work longer. Paradoxically, women, outside the context of the questionnaire, also said that the activity of pruning is the lightest service in tomato growing. Some women even think of it as fun.

Other crops adopted in the projects selected by the survey use women's work in various activities:

In grapes: Cutting back low shoots (vertical), controlling formation (horizontal), limiting production (cutting excessive branches), picking grapes, cutting back bunches, the application of hormones, picking, selecting, and packing.

In passion fruit: Sowing seeds, planting out, shaping (of the plant), pruning (green and dry), cutting back (climbers), picking, selecting, classifying, and packing.

In onions: Sowing seeds, transplanting, fertilizing, picking, and pruning.

In watermelon: Planting, shaping the plant, cutting out excess fruit, and harvesting.

In beans: Harvesting, pulling up, and entwining the young plants.

Men's responsibility in these crops is to spray, weed, water, transport the product, and drive the machines. Which gender of worker will be chosen depends on the type of activity performed in the opinion of most entrepreneurs. This is why planting, harvesting, pruning, and the selection of fruit have been elected as merely women's activities because of the "natural" characteristics of women. The choice of women or men to carry out given activities leads to the specialization of the worker and the result is an increase in profits.

Statements made by employers show their opinion about the gender of the workforce:

Men rest more than women, they are lazier. They wait for the opportunity to get the best price for their labour (value of the daily rate), whereas women are available all the time. (Tomato colonist)

Women work more willing than men. Women work in the midst of the thorny weeds. Beggars can't be choosers. There was a woman who got to work on a bean plant that I had given up because there were too many thorny weeds. There was so much of it that her skirt got embroidered with the prickly seeds. It even managed to get into her underwear. (Tomato colonist)

Women here are very useful. The job requires delicate hands. I think that more than 60% of the workforce on this project is made up of women. When it comes to picking, 98% or 100% of the workforce are women. When a man works with tomatoes, he feels pains in his spine but a woman puts up with it. (Tomato colonist)

Women do most of the planting. They have more patience, skill, and produce more. (Specialist in the multicrop enterprise)

We here contract women to tie grapes because they are more skillful at this service. (Specialist in the multicrop enterprise)

Cropping beans is a bad job as you work the whole time with your back bent. Women put up with it because they don't have much of a spinal column. There are women who want to go on picking beans until it is late. When you earn according to the kilo, they come back at daybreak. A man can't cope with this service. I've already ruined my hip joint cropping beans. (Bean colonist)

The management of agricultural jobs is directly linked to the volume of capital used in the undertaking. Thus, in the Northeast's irrigated areas, small-scale entrepreneurs, such as the colonists of the Boacica, Moxotó, and Morada Nova projects, personally administer the land, supervise the jobs, as well as participate in the agricultural activities and maintain contact with workers.

Generally, these colonists live in the same municipality, often near the town itself. This allows them to have a closer relationship with the workers. These workers do not think of the colonist as a boss but as a friend. Aside from these factors, the type of contract production/piecework that prevails in these projects creates greater freedom of employment and minimizes the distant relationship between boss and worker.

As the colonist lives and works alongside the workers, he is able personally to carry out recruitment of the workforce he needs, or to ask for the help from other employees to do so. The practice of offering services on his land is also accepted by the colonist. Generally, this entrepreneur relies on the services of those workers he has employed before. The procedure for recruiting the workforce is not usually gender dependent.

The large-scale rural entrepreneurs, such as those of the Tourão project, in contrast even to the majority of colonists, very often do not live in the municipality nor even the state where their enterprises have been set up. Contact between the workers and the entrepreneur is made through the intermediation of administrators, managers, etc.

The agricultural activities are supervised by an employee, generally a man. The role of the supervisor is to control productivity, the time of arrival and departure from work, the time for workers' physiological necessities and meals, as well as to prevent workers from taking home the crops produced in the enterprise. To carry out his work, the supervisor moves about the farmed areas on foot, by motorcycle or by car, depending on the distance and the availability of transport in the enterprise.

When they need to contract men or woman rural workers, these enterprises use mass media to advertise. In the same way as in small plots, they accept people known to those who already work for the firms, as well as newcomers. The differences in relationship between boss and entrepreneur result in distinct levels of capital accumulation. Thus the greater the accumulation, the clearer the pressure on individuals becomes, a practice that is camouflaged in the patriarchal system.

A Woman's Working Day

The participation of women in remunerated work does not exempt them from domestic chores, except when they have daughters or other women in the family who can do household duties, historically considered the female domain. Looking after the home, children, farmyard animals, and a backyard has rarely been carried out by men.

Nevertheless, it has been observed in the irrigated areas under study that men tend to collaborate in the domestic activities if the woman goes to work. It must be emphasized, however, that the performance of these activities is seen as help, which gives no obligation for the man to carry them out systematically. He continues to hold the woman responsible for domestic work.

As the participation of men in these activities is only collaboration, when a woman joins the labour market, she is forced to change her schedule for domestic chores. They are done very early in the morning before she leaves for work or at night when she returns from work or during the weekends. In the surveyed areas, it was observed that rural women workers of the dry lands, who only "help" the family in agricultural matters, manage to reconcile work with housework, in contrast to most irrigation women who need to extend their working day to carry out domestic chores.

Working for the family whose patch of land is near their homes (42.4% of women of the dry lands stated that they lived at a maximum distance of one kilometre from their work) women leave home and head for their agricultural activities between 6 and 7 a.m. This is to take advantage of the mildness of the morning sun as they walk to work, and they return around 11 a.m.

In cases where there is no help available, women workers begin or continue the domestic activities they began before work and then return to the fields, if necessary, after lunch around 3 p.m. and return home at 6 p.m. Sometimes, such as during harvesting, women dedicate extra hours to agriculture, which extends well into the night. The closeness between work and home, along with the family relationship, which unites the owner to women workers, allows women of the dry lands to return home during their working hours to do domestic activities.

According to collected data, the woman worker of the dry lands has a working day of 11 hours and 50 minutes, of which 8 hours and 20 minutes are dedicated to agricultural duties. These women work in agriculture from Monday to Friday. Saturdays and Sundays are for household jobs left undone during the week. Depending on the growing stage, however, women workers may spend some days without going to the fields. Women workers of the irrigated areas, however, have a working day of similar duration to that of women of the dry lands.

This is surprising given the type of wage-earning work relations in irrigation, as well as the average distance of 12 km that separates the workplace from these women's homes. The explanation is that the working day, these women declared, begins with their agricultural activities and ends with their domestic chores at home.

The irrigation land women, therefore, do not count the hours travelled from home to work, nor do they count the hours dedicated to preparing family meals and other domestic chores before they leave for work. Adding this time increases the working day of these women to a total of 18 hours. This working day is not unique to the women workers in the Northeast, as it has also been observed among women workers in steel and iron in São Paulo (Leite 1984).

As the duration of the daily work of the women for Northeast irrigation areas is related to the distance between their homes and the location of the project, most of the women of Boacica and Moxotó walked 6 km to work. The relative distance between home and work allows these women a longer rest period but this does not happen with the women workers of Tourão. In this project, 75.4% of the women need to make an average journey of 22 km to reach work, whereas 6.1% travel 37 km, and only 4.1% travel 6 km. These long distances, covered by trucks belonging to the surveyed firms, reduce the resting hours.

The working day for women who live far from their workplace, as is the case for most of the Tourão women, begins at between 3 and 4 a.m. Their first task is to prepare the food they and other members of the family will eat at breakfast and lunch, dinner being prepared when they return home. These women then feed the farmyard animals (chickens, pigs, etc.) if they have any, and afterward they walk to meet the truck that will pass to take them to work. Generally, the road used is far from their homes, which obliges them to walk a long distance to the pick-up point.

Various interviewees indicated that requests were passed on to the vehicles' proprietors to pass nearer the women's homes. The requests, however, were turned down as the entrepreneurs said that the requested change would directly affect the costs of production and that it would be better to fire the women workers who lived further away than to change the transportation route. Obviously, this argument is based on the oversupply of workers in the Northeast region.

After their long journeys and domestic chores, women workers face the agricultural activities. Depending on the firm, 8 consecutive hours of work begin at 6, 8, or 10 o'clock or, in the case of a single group, from 8 a.m. to 5:30 p.m. with one break for lunch. Generally, before beginning agricultural work, women have breakfast, brought from home. This is very often limited to a cup of coffee and, sometimes, is accompanied by bread, maize couscous, a salt biscuit, or a "*beiju*" (a pancake made with manioc dough). Very rarely the menu may include meat with manioc flour. When they have finished this snack, controlled by a foreman (employed by the enterprise) the women begin their agricultural chores.

The 2 hours for lunch granted in the labour legislation, is not respected by the surveyed firms, according to the statements made by the women interviewed:

In the milling season they only give us between 10 and 15 minutes for lunch. There are days when I take time out and spend an hour resting. When the factory needs cane, you are hurried at work. (Sugarcane woman worker)

Here, we start lunch at 11:30, and when it's 1:00 we have to get back to work. There's time to relax a bit. (Multicrop woman worker)

I've 15 minutes for lunch. I don't exactly *eat* lunch, I wolf it down. There are even some foremen who get very mad if they see us sitting for more than 15 minutes. It would be nice if we could have at least an hour to relax. (Sugarcane worker)

This is also true for men who, although working as wage earners with their labour cards signed, subject themselves to this kind of exploitation to avoid losing their jobs.

Lunch is prepared at home by the woman worker. Generally, this meal is wrapped up in inadequate packages (tin cans or plastic bags) and remains exposed to the sun, heat, and rain while the woman is doing agricultural labour. This is because there is no appropriate place to keep it and this leads to spoilage of the food. When this happens, women have no chance of having a second meal and await their return home to eat. At lunch, the basic component is beans seasoned in oil with rice or spaghetti and manioc flour. It is rare to have meat in their lunch, as with the money they earn, it is possible only to buy meat once a week, on Sunday.

After the agricultural activities are over, women return home. Women workers who live far from the project and those wage-earning women who work by task return home later according to the following statements:

I get here at 8 a.m. but I don't have a specific time for going home. I only leave work when I finish the task. When there's cane to plant, I finish work early. But when there isn't, I sometimes work until 6.30 in the evening because I have to compensate the time I spend waiting for the cane to arrive. (Woman sugarcane worker)

I get up at 7 a.m. sharp. I live far from here and I have to leave home very early and I only get back at 7 o'clock at night. (Multicrop woman worker)

To get to work I walk 12 km. I always get to work at 6 a.m. and finish at 4 o'clock in the afternoon but I only get home between 6 and 7 in the evening. (Woman tomato worker)

On arriving home from agricultural work, women unlike most men cannot rest because of their domestic duties of washing and ironing clothes, sweeping the house, preparing dinner, mending clothes, bathing the children, and, sometimes, beginning to prepare meals for the following day. The fulfillment of these domestic duties requires women to begin their night-time rest later than otherwise. They generally go to bed close to midnight according to the women interviewed.

Poor Working Conditions Offered to Women

In the surveyed areas it was observed that the structures, set up by firms adopting the irrigation technique, are deficient in facilities indispensable for the well-being of rural workers. In the same way, the supply of equipment for personal protection is uncertain. The rural labour legislation

indicates that every enterprise must install drinking fountains, lavatories, sanitary equipment, changing rooms with individual private lockers for women, and to supply, free of charge, the resources for individual protection such as spectacles, masks, gloves, and special clothes for the protection of the eyes, respiratory system and skin, depending on the nature of the work.

In the surveyed enterprises there were no bathrooms. The absence of these is especially hard on women because their monthly menstruation demands that they make more frequent visits to the bathroom to take care of their personal hygiene. To overcome the lack of an adequate place to meet their physiological necessities, women improvise by using sheets, held up by their companions, or take shelter behind each other to ensure a minimum of privacy from the men. This strategy is commonly adopted in the open fields but, where there are trees, women take advantage of them.

Apart from the absence of bathrooms, it was also observed that there is a lack of any appropriate place for the rural workers to have their meals. The lack of such facilities obliges workers to make use of whatever is available. The women stated that they eat under the shade of trees, where there are any, or in the middle of the field in full sun. For seats, they use fertilizer sacks and tomato boxes. When there are none they sit on the ground. Normally, meals are eaten in the same place where they carry out their work.

Protection equipment is seldom used by workers, which, along with inadequate transportation to and from work, leads to accidents and deaths. The agents responsible for this are employers who are careless in complying with the legislation that regulates health and safety at work, and the state itself, which does not maintain an appropriate inspection system.

This is why the president of the union for specialists in safety at work in Pernambuco singles out Brazil as being the world record holder in accidents at work and states that the official numbers recorded by the National Social Security Institute only correspond to 20% of total accidents. In 1991 in Pernambuco alone, declares the president, 10,728 accidents were registered, of which 34.3% were observed in the interior of the state. Of this total, 9,685 occurred in the work environment, whereas 955 happened to and from work; professional illnesses totalled 88 cases (*Diário de Pernambuco* 1992). The situation of workers in the surveyed area is no different for cases of accidents at work frequently occur in these localities.

The women interviewed in the irrigation area stated that they were more vulnerable to accidents from their work than those from the dry lands. There is no doubt that the cultivation technique, the work activities, and the misuse of personal protection equipment lead to a greater number of accidents in the areas that are being modernized. The type of accident that most often occurs, according to women, is cuts and piercing of the arms and legs caused by thorns and tools, such as the machete used to cut rice, whereas the women of the dry lands stated they suffer more from fractures (foot, fingers, arms, and legs).

According to 55.4% of the irrigation area women, the type of work contract, in addition to the lack of respect for labour legislation, contributes to keeping rural women working, even

when they have suffered an accident during their agricultural activities. Of this total, 41.3% work for firms that contract women permanently.

Because of the absence or scarcity of personal protection equipment, work accidents are a part of life, for this equipment is rarely used even in activities in which it is essential for the health of the worker. Thus, it is common, in the irrigated areas, for workers to spray agrochemicals to combat pests and diseases that affect crops without using protection masks. In the opinion of women workers, the use of this equipment is a waste of time for it makes breathing difficult. The truth is that its absence provokes innumerable illnesses, mainly associated with the respiratory system. Aside from spraying, which is exclusively a male worker's responsibility, other activities carried out by women demand the use of a mask, although in the surveyed area only 0.9% of the women interviewed use one:

You work bare faced when weeding in the cane fields and so the foliage can cut your face and stab you in your eyes. (Woman sugarcane worker)

Along with the mask, boots are of great use to women workers in the irrigated areas. Their function is to protect them against disease-bearing snails, thorns, and snake bites, dangers frequently found in the flooded rice plantations. They similarly protect against ants in the bean harvest and against thorns in tomato picking. Although the use of boots is important, only 3.4% of the women interviewed stated they used them. Most of the women work bare footed, others with rubber sandals, and a few with canvas shoes. According to the women, plastic boots supplied by employers for certain activities make it difficult to do tasks carried out in water or on dry land. When in water these boots make the woman worker's movements difficult, and when on dry land the boots made of plastic make their feet very hot, especially in the summer.

Gloves are equally important equipment. These are only used by 20% of the women interviewed. Most women interviewed work in the growing of sugarcane and perform activities like digging up stones and jobs concerned with milling, such as grinding. The heat that builds up in the stones makes it impossible for women to carry this out without the use of gloves. The remaining agricultural activities also require gloves, for example, fertilizing. The chemical fertilizer used in sugarcane growing is corrosive and harms workers who do not use gloves. Similarly, in tomato picking, the innumerable thorns in this activity prick the women's hands often preventing them from continuing the work.

The most common means of personal protection are the (straw or cloth) hat and the headscarf used by women workers, and about 80% would not work without them. They are very popular because they are cheap, easy to get, and are a way of protecting the head from the sun's heat.

Although the importance of the use of personal protection equipment is widely recognized by the women, it may not be in their interest to use them depending on the type of work contract. An agreement by production requires the contracted woman to be very agile to earn the highest

earnings. Under this payment method, the use of gloves is indispensable, yet is often set aside by women workers because gloves reduce the mobility of their hands and the productivity of work, just as boots make movements in the flooded fields difficult.

The supply of the equipment (gloves, masks, boots), even though on a limited scale, is carried out by the employers of the two large firms surveyed, but the others claim that they do not have the financial capacity to adopt the same procedure. The cost of the equipment is discounted from the workers' wages in installments. The handing over of equipment is restricted to women employed in certain activities, for example, in the grinding of sugarcane.

As the women see it, the duties covered by safety equipment are those that may damage the final production of the firm. In such activities, a break in production may result from a lack of women workers because of nonuse of the equipment to protect themselves. This will lead to a consequent delay in both the arrival of cane in the factory for milling and the profit in the employer's pocket. The entrepreneurial class, however, defends itself by declaring that it supplies the equipment to those workers who are interested in using it.

In general, women workers consider that it is the responsibility of the employer to supply personal protection equipment free of charge and the tools for the job. The tools, such as mattocks and machetes, are acquired by the worker for the activities of weeding and cutting cane. The following statements show the women workers' opinions with respect to the commitment that the employer should undertake in relation to work instruments:

The enterprise should give the employee shoes, gloves, and a mask. All of us here spend a lot of money on footwear because of the mud but they don't give anything. If they did, we'd be better protected. (Woman sugarcane worker)

The enterprise makes a large profit, and it should see to it that we have what we need to do our work. If it gave shoes, at least, it would be nice because I've gone through four pair in 6 months of working. (Multicrop woman worker)

If I had a full-length skirt, a long-sleeved blouse, and gloves and boots because of the thorns, I wouldn't have health problems. The colonists should provide all of this but they don't. (Woman rice worker)

Apart from the lack of personal protection equipment like gloves, masks, and boots, the very clothes that women use in the performance of their agricultural tasks are not always adequate for the work and this leads to injuries. The most usual clothes are long trousers, dresses, skirts, and short/long-sleeved blouses, not always in perfect condition.

Depending on the money available, these clothes are worn in combination to protect the legs and arms better from the tomato weed thorns; from the cane foliage, which causes skin

irritations; and from the heat of the sun. The women workers who cover themselves up the least remain more exposed to accidents.

Health of the Woman Worker

Modernization of agriculture through irrigation has been shown to have deleterious effects on rural workers' health. In the Northeast region, the way this crop growing is put into practice damages the workers' health by such factors as the deficient and inadequate use of personal protection equipment, totally disregarding the workers' safety.

The area's hot, humid climate favours the transmission of illnesses contracted via parasites. Inappropriate quantities and types of agrochemicals are used and expiry dates are often ignored. In addition, other aggravating factors of a structural order characterize the rural Northeast; the extreme poverty, the low level of political participation, and the poor level of education all contributing to the vulnerability of the irrigation workers.

The practice of irrigation, according to 72.3% of rural women workers interviewed, has caused innumerable illnesses. Headaches, according to these women, affect them the most and are the most painful followed by spine problems, skin diseases, infections, and respiratory and digestive problems.

The difference in the way each sex is treated has been accentuated by capital in both the private the public spheres, and it is this difference that appears as the main reason for the problems that affect women's health.

Various studies have demonstrated that women rural workers, especially in developing countries, work more hours per day than men both in agriculture and in those activities traditionally considered women's tasks, independent of the physical strength that these tasks demand (Boserup 1970; Nelson 1979; World Federation of Public Health Associations 1986). The agricultural activities reserved for women may create adverse conditions for their health as does the excessively long working day.

Headaches, ranked by women in first place, can be caused by fatigue, emotional stress, infections, excessive exposure to the sun, and by noxious substances. This is continuously experienced by workers in irrigation areas as they carry out their duties independent of their sex. It should be remembered, however, that physical tiredness is reinforced in rural women because, in addition to their agricultural duties, they still have to do domestic activities.

Headaches, according to the survey, affect 60% of the women workers. They work for fixed time schedules and live far from their working place, on average 20 km, which further lengthens their working day. Moreover, although they receive the minimum monthly salary, they have to complete one task every day or else suffer a loss in earnings or work extra unpaid hours in the labour team. These conditions lead women to emotional stress as well as to physical exhaustion.

The tendency toward activity specialization in agricultural areas undergoing modernization, as has been stated in this study, selects women as being responsible for harvesting and planting. These activities, however, have a negative affect on women's health as they require the women to work constantly bending down. These body positions are inevitable and frequently cause problems in the spinal cord as the following statements illustrate:

Colonists prefer women as workers. They say that looking after tomatoes was made for women. Men don't like to look after tomatoes because it hurts their backs and women can do this job. Colonists don't worry about women's health. (Woman tomato worker)

Women here don't have good health. They work to avoid dying of starvation. I've had pains in my backbone since I was 14 when I began working in rice. (Woman rice worker)

Looking after beans is more a woman's job than a man's. We work with a sack on our backs and plant beans as we go. My shoulder swells up and my spine is killing me because, in addition to the weight of the sack, I have to work hunched over the whole time to pick beans. (Woman worker in beans)

I get back pains. I've always worked in planting. I only carry on because I need to. I've already asked the foreman to put me on fungus removal but it's not been possible so far. (Woman sugarcane worker)

Women get ill more than men. If men did the same service as women, they'd get ill too. (Woman sugarcane worker)

In addition to spine problems that, in the last 2 months of 1988, afflicted 35.8% of the women interviewed, the abnormal body posture makes infections easier to catch, principally in the gynecological organs. Working long hours in a squatting position, the worker's vagina is in close contact with noxious substances, which provokes innumerable illnesses and even death.

Gynecological problems suffered by the irrigation area women may additionally originate from of the lack of body hygiene, mainly due to the extremely poor living and working conditions offered to them. In addition to these causes, women recognize that the "burning" (high temperatures), the "poison" or "powder" (agrochemicals), the substances given off by tomatoes or rice, and the sugarcane fungus are equally responsible for gynecological infections such as vaginal discharge and itching:

Picking tomatoes causes discharge in women. Women who work in tomatoes, all of them have vaginal discharge. (Woman tomato worker)

I know many women who complain about discharge. The powder on the tomato makes you itch. (Woman tomato worker)

Women have a discharge. Most of my colleagues say they do. Women work squatting down because working standing up but bent over hurts your back. (Woman tomato worker)

The fungus also harms your vagina. I wear two pairs of underwear and long trousers to protect myself. The fungus powder gets into your body. This powder is very fine, it goes through your clothes to your body. (Woman sugarcane worker)

This rice job frequently results in inflammation of the uterus. I feel pains at the base of my belly. The poison causes lots of gynecological illnesses. (Woman rice worker)

My grandma's sister (a tomato worker) died because of the poison. It gave her a urinary infection. The doctor said she got the disease while planting. He said it was a disease of the uterus. She died of cancer. (Woman tomato worker)

By "burning" sensations, the women workers are referring to the temperatures of water, food, the environment, and body that form part of the "hot-cold" syndrome, observed in many parts of the world. The importance of thermic stress in human beings is based on well-known facts. In this study, the subject will only be discussed in the context of the hot climate that characterizes the areas surveyed.

As McCullough (1978, p. 241) explains, "the normal temperature of the human brain is 37°C, only 5°C beneath the lethal limit; nevertheless, people live and work in many areas of the world where thermic stress can lead to brain temperatures near the lethal limit." This is the case in the Northeast where prevailing atmospheric temperatures can reach around 40°C. This is why complaints and observations of the women interviewed cannot be ignored.

The equilibrium of the body is considered essential and it is maintained by various means including adjustments to the levels of activity, drink, and food. The body cannot become very cold or very hot because diseases or death may occur. These can be considered prophylactic measures against the dangers of excessive heat and include fainting, edema, fatigue, headache and "rolling mill," and gonorrhea, which are health problems affecting nonacclimatized people. They can also affect people who do not have the financial means to take the appropriate measures. More serious illnesses are heat cramp and sun stroke caused by hard physical work in hot environments. These illnesses are extremely painful and can be fatal even with medical assistance.

The very generalized complaints of the women workers as to the problems of heat and its consequences for their health are understandable. In contrast to those in the dry lands, the irrigation land women are no longer able to make the adjustments necessary to maintain healthy

bodies and, consequently, run greater health risks. Some of these adjustments cannot be made in the irrigation areas, as can be seen in the following observations:

Irrigation gives rise to more illnesses than the dry lands. You work in the sun, rain, and mud. In the dry lands, the woman worker gets cover in the huts and works where it's dry.
(Dry lands woman worker)

If you work in the sun, your blood goes to your head. (Dry lands woman worker)

The irrigation area causes more illness than the dry lands area, because in irrigation we work straight through [without stopping] and on the dry lands we work to fit in with the rain. (Irrigation woman worker)

Irrigation causes more illnesses than the dry lands because you work in hot mud. You face changing temperatures. You begin at daybreak with rain, then it gets really hot.
(Irrigation woman worker)

The "burning" and "poison" variables also cause, according to these women, skin, respiratory, and digestive diseases. Skin diseases, which affected 23% of women workers in the year of field research, mainly affected women who worked in rice. Rice growing requires women to work in the mud during the activities of planting and harvesting. Prolonged exposure to water, even clean water, affects the skin negatively by reducing or even removing its natural protection and thus leaving it subject to irritations and the easy penetration of parasites and noxious substances.

Apart from working in the mud, the rice-growing women drink water as they carry out their duties, but this water is contaminated with agrochemicals and parasites. According to statements by various specialists and others, the spraying machines, the washing of contaminated clothes in the irrigation channels, and the faeces expelled into the channels by the workers out of a lack of toilet facilities all contribute to the spread of a number of infections.

Apart from rice growing, other crops also cause skin illnesses and irritations. In the opinion of women interviewed, the agrochemicals and the fertilizers used are the main factors responsible:

The poison stays on the tomatoes. Your eyes itch and so do your arms. When I take a bath, I use rotten tomatoes squashed on my skin to help me remove the poison. I then need to rub myself all over with lots of soap. (Woman tomato worker)

When I get home, I've to take a bath to get the green [juice] of the tomato off. I need to use soap twice. The tomato powder gives you problems in your skin and head. When I

get home, I feel my skin stinging, like pins and needles, and it only goes away after half an hour. (Woman tomato worker)

The fertilizer eats away at your hands and cracks the skin of your feet. Your hands become raw flesh. I only worked with fertilizer for one day, I came out with a terrible allergy. I went to the doctor and he said: That's how it is, you don't have anything special. (Sugarcane woman worker)

Working in beans [picking and gathering] gives you blisters on your hands because of the poison. You need to go to the doctor. (Woman bean worker)

Agrochemicals are considered by the women as harmful for their health, and appear as the main cause of respiratory problems. Among the crops covered by this study, data show that the tomato is the crop that generated most respiratory problems in women workers. This statement can be explained by the fact that the agricultural workers, as a rule, spray the tomato until the day it is picked to guarantee the aesthetic appearance of the product. Direct contact, therefore, between the women and the tomatoes becomes inevitable because they are responsible for most of the picking. The statements reveal that the "poison" is seen by the women interviewed as the principal cause of respiratory problems:

The poison stays on the tomato leaves. When we breathe, we feel short of breath and our faces go grayish, our noses get stuffed up, and our eyes hurt a lot. (Woman tomato worker)

The sugarcane fungus ruins your eyesight. It also damages your throat and lungs. (Sugarcane worker)

When the rice is very dry it gives off a powder that makes you sneeze. This powder causes illnesses in women's lungs and bronchial tracks. (Woman rice worker)

The sugarcane powder gives you a bad flu. From the moment I began sugarcane work I had one bad flu after another. Now I've got used to it. (Woman sugarcane worker)

These statements agree with the impressions of public health authorities. A public official in the Paraná State Department of Health said, "the immunity of people to illnesses such as the flu, bronchitis, etc., is falling every year [in agricultural areas] and we believe that agrochemicals play a main role in this" (Bull and Hathaway 1986, p. 56).

The consumption of water not suited for drinking and contaminated food seems to be the main cause of digestive tract problems. As has already been mentioned in this study, the surveyed irrigation areas do not have food eating areas at the service of workers.

Except for one enterprise that grows sugarcane and that supplies a meal (a hot lunch) only to men undertaking certain activities, all other workers feed themselves on cold lunches. Women prepare their meals at home very early in the morning or the night before. Thus the food is stored for a long period at a temperature in which bacteria can reproduce. The symptoms most frequently observed due to the consumption of spoiled food are, according to the women interviewed, diarrhea, abdominal pains, and vomiting.

Likewise, the lack of drinkable water in the workplace constitutes a permanent threat to the workers' health. According to women interviewed, the water drunk comes from the irrigation channels. Moreover, the water is contaminated not only by agrochemicals but also by snails. In addition to the improper state of water, water in channels is permanently at a high temperature:

The water we drink is dirty but we have to drink it. The water causes a lot of sickness and if we go and get some in the colonist's (the landowner's) home, when we get back to the workplace it is hot anyway. So I prefer to stick with the channel water to save time, for in picking you get paid by production. (Woman tomato worker)

I drink the warm water from the channel. I can't bring water from home because I live far away. I think the water is bad for you. There are lots of snails in the channel and they carry diseases. Warm water and spraying bring a lot of sickness to women. (Woman tomato worker)

I drink water from the very mud I'm working in. It's snail water and dirty. If I'm working close to the channel, I drink channel water which is cleaner. If I'm far away, I drink water from the mud where I'm working so I don't waste time. If I spent my time thinking about the chances of getting sick at work, I wouldn't work. (Woman rice worker)

The sugarcane cutters had "dysentery" all the time and they thought it was because of the food. They found out later that it was because of the water that was put into barrels in the middle of the plantation. The manager of the enterprise I work for decided that all the workers should buy a thermos flask [sold by the firm itself] to keep the water taken from the barrels cold. Today no one suffers from stomachache anymore. (Woman sugarcane worker)

The solution to the water-quality problem found by one of the firms in the area, as the foregoing statement shows, obviously was no more than a palliative. Apart from being a measure that did not solve the problem according to the women, many workers rapidly got rid of their thermos flasks due to financial necessities.

According to the women, the consumption of this water often causes headaches, nausea, loss of appetite, parasites, and itching. Drinking the contaminated water also causes schistosomiasis as was determined in the studied areas. This is not limited to the Northeast

irrigation region, however, for irrigation areas all over the world are recognized as leading to the dissemination of various schistosomiasis-related infections (Coutinho et al. 1989).

This disease, caused by a parasite called *Schistosoma mansoni*, needs an intermediary host, a snail, to develop. This host, found in the surveyed irrigation channels area, is wide spread in the lakes and rivers of Brazil. The transmission of schistosomiasis arises through the feces of someone who has caught it. The feces contaminate the water in which there are snails. The feces parasite enters the snails to complete its development.

Contamination occurs through the skin if in contact with infested water, or by entering the mucous membrane of the digestive tract when this water is drunk. The first symptom is an intense itch at the point where the parasites have entered. After 3 or 4 weeks, the patient can suffer from headaches, dizziness, giddiness, nauseous feelings, feeling weak, shivering, abdominal pains, and fever. Later on, the carrier of schistosomiasis will have inflammations of the liver, lungs, etc.

Diagnosis of this disease is performed in a laboratory examination of feces, whereas its treatment requires the use of medicine. Neither the means of detection of this disease nor the resources necessary to cure it are readily available to these people given the scant public health system, especially in the Northeast rural environment. The residents of the Northeast irrigation areas are likely, therefore, to be carriers of the disease without having access to the resources to identify and cure it.

Despite the small proportion of women workers with schistosomiasis, 4.7% of the women interviewed in the survey area, the specialists and workers were widely aware that the irrigation channels were infested with snails. If the existence in the channels of the schistosomiasis intermediary host is accepted as being true, it is possible that the percentage of workers contaminated is greater than estimated.

Women workers of the irrigated localities are more exposed than men to the risks of infection by schistosomiasis. They are responsible for washing clothes, pots, and dishes and fetching water for domestic consumption, chores that require direct contact with water. In the same way, the undertaking of agricultural activities, such as planting and transplanting rice in the São Francisco river region, require women to stay in the water while carrying out these activities. In this scenario, it is difficult not to classify the working conditions of women who work in irrigation as subhuman because they are forced by necessity to drink and be in contact with contaminated water.

Pesticides are recognized all over the world as having a negative influence on human health. It is equally recognized that this problem is even greater in developing countries. The use and abuse of agrochemicals is worrying, if not alarming.

"Every year Brazil spends around US\$1.5 billion on these poisons." In 1986, when the Cruzado Plan temporarily injected money into crop growing, the consumption of agrochemicals jumped from 128,000 to 166,000 tonnes. "This worsened the 1983 average of 3.8 kilos of poison

per inhabitant, surpassing seven times the average of 0.5 kilos" (Zero Hora 1990). The concern about the consequences of agrochemicals on health was revealed in an article published in the *Diário de Pernambuco* of 14 October 1990 that warned the public: "Agrochemicals are already causing deaths in Pernambuco." The same article considered "fundamental, a survey of the consequences of the use of agrochemicals in Pernambuco."

The lack of data about intoxications and their consequences to human health is a generalized problem in Brazil for the existing official numbers are notoriously underestimated "because a lack of diagnoses and an active concern by the public health authorities." According to Dr Zambroni of the Intoxication Control Center in Campinas, São Paulo, there must be "for every confirmed case in hospitals or out-patient clinics about 250 nonregistered victims of intoxication by agrochemicals" (Bull and Hathaway 1986, p. 55).

One of the greatest problems is that "the free availability of these highly dangerous products, some of which have even been banned by the federal government, continues to be a frequent cause of accidents in the countryside and the city" (Bull and Hathaway 1986, p. 40).

The problem of agrochemicals control is exacerbated by the lack of guidance in how to use them. For example, a survey of the Technical Assistance and Rural Extension Enterprise of the State of Pernambuco (EMATER) revealed that only 13% of agricultural workers applied agrochemicals according to the instructions, 75% of them did not respect the validity dates, 91% did not use any means of protection when they used them, 67% pollute rivers and streams, and 24% use the packaging to store or carry food (Bull and Hathaway 1986, p. 41).

The gravity and extension of the consequences of these problems on the health of the Brazilian population in general, and of the rural worker in particular, are difficult to estimate. The following data, however, will serve as an example. In Paraná, of the 224 agricultural workers who underwent the acetylcholinesterase exam — which reveals the residue level and the amount of an agrochemical, particularly the active ingredient in the blood — 42 were intoxicated (Fantin 1986).

In Campinas, São Paulo state, between January and September 1983 (Bull and Hathaway 1986):

...of the 1,073 rural workers interviewed, 133 of them had already been poisoned by agrochemicals and 47 had been hospitalized at least once. Only 36 of the 1,073 worked directly with agrochemicals. In Pien, in the state of Paraná, of the 20 pregnant women who worked in the 1985 tobacco harvest, 12 had miscarriages as a consequence of the inappropriate and excessive use of agrochemicals. In 10 municipalities in west Paraná, 35 out of every 100 workers have poison in their blood, according to a survey of the Cattle-Breeding Cooperative of Cascavel, Paraná.

Equally worrying is the influence that agrochemicals have on newborns whose mothers have been working in irrigation, according to the following statements:

I think that agrochemical substances harm the foetus. The child is born intoxicated. Many children are born harmed by the mother's work. (Woman sugarcane worker)

Round here there are children born with twisted feet, lumps on their heads, and other defects. (Woman rice worker)

I think children whose mothers work in irrigation are born sick because the mother breathes in the rice powder with the poison. If smoking is no good for you, just imagine what that powder does to you!. (Woman rice worker)

Pregnant women who work in rice must have sick kids because of the heat up and the poison. Their children grow up very slowly. Many only begin to walk when they are 3 years old. That's not normal!. (Woman rice worker)

The children are born ill because the pregnant women drink water from the channels where they clean out the poison pumps, and wash there. People die in it. (President of rural trade union)

The impression created by the literature and the media, however, is that the agrochemicals affect rural women's health less than men, or even not at all. It seems that this reflects the persistence of the image created for women, seen first as wives and mothers and second as workers, despite their active and important contribution to economic and social development, such as agriculture.

This distortion of women's real role in agriculture is worrying, for any action to correct the abuse in the use of pesticides may not take women into consideration even though, as has been shown, they may be more exposed to these substances than men. In the irrigated areas of the Northeast, although spraying is done by men, women also have direct and indirect contact with agrochemicals according to one specialist in the irrigation project: "Women don't spray but when they are harvesting they do have direct contact with pesticides. In tomato picking, women's hands become yellowed by the toxic materials."

It must be emphasized that producers in the area studied apply agrochemicals with unnecessary 'frequency and in high doses. They spray right up to the picking day, when they should really stop spraying 5-7 days beforehand. The intoxication risks that the women workers run are a frequent, if not a permanent, threat to their health.

The agrochemicals enter women's bodies in the following ways: drinking contaminated water, touching the mouth with contaminated hands, breathing the powder or spray during or soon after spraying, handling pesticides or the residues that remain in the plantations by absorption of the powder or spray blown by the wind, washing contaminated clothes, and taking baths in contaminated water.

Some immediate intoxication symptoms are well known. Depending on the type of pesticide and the degree of exposure and contamination, intoxications can be classified as mild, moderate, or serious cases. Almost all the intoxication symptoms considered "mild", "moderate," or even "serious" have been mentioned by the women of the Northeast irrigation area. The following statements give some idea of these symptoms:

Pesticides cause a lot of sickness. You go purple, blotchy, or red and throw up. You go to the doctor, get an injection and you're alright. (Woman tomato worker)

The smell of the poison makes you dizzy and gives you a headache. It wears out your head. (Woman sugarcane worker)

The poison on the tomato makes your eyes swell up. (Woman tomato worker)

The pesticide does a lot of harm to women and men. In the beginning [when I began in irrigation] I threw up and had vertigo. Later on I got used to it. (Woman tomato worker)

In tomato picking, women breathe in the poison of the tomato. It gives you a headache, a bitter taste in your mouth, and dizziness. It makes your skin and head sick. (Woman tomato worker)

Symptoms of *mild* intoxication are headache, nausea, dizziness, tiredness, skin and eye irritations, irritations in the nose and throat, diarrhea, perspiration, and loss of appetite. The symptoms of *moderate* intoxication are vomiting, blurred vision, cramps, difficulty in breathing, contraction of the pupils, excessive perspiration, muscular twitches, fatigue, and nervous stress. The symptoms of *serious* intoxication are gasping for air, convulsions, loss of consciousness, and loss of pulse, which may cause death (Training Manual 1983).

The absence of gynecological symptoms due to the use of agrochemicals was noticed in the literature on the subject. This can be attributed to the male-dominated vision of health problems arising from the use of agrochemicals.

In the studied areas, seven types of agrochemicals were identified: Folidol/Paraton/Methylic, Fostion, Dicofol/Kelthane, Triobel, 'Ambush/Pounce, Ridomil/Metalaxil, and Dethane/Zineb. From these products, Folidol and Fostion belong to the chemical group of organophosphorates, which are highly toxic, however, they degrade rapidly and do not accumulate in fatty tissue (Bull and Hathaway 1986). Triobel and Dethane are carbonates that, if compared to phosphorates and chlorates, are considered to be of medium acute toxicity and degrade rapidly and do not accumulate in fatty tissue.

The phosphate and carbonate agrochemicals act to inhibit cholinesterase in nervous synapsis. Cholinesterase is an enzyme that hydrolyses the acetylcholine in the cholinergic

junctions of the nervous system. It occurs between the vertebrates in the nervous system and the motor and parasympathetic ramifications of the peripheral nervous system. Its inhibition by phosphate and carbonate agrochemicals leads to the appearance of intoxication symptoms or even to death.

The neurological effects include slow reflexes, deterioration of logical thinking and memory, and behavioral alterations with tendencies to suicide. In addition, in the case of various carbonates of these products there are cancerous effects. The following statements from the women interviewed show the influence of these agrochemicals on human health:

Many people who work in tomatoes get "drunk" on the agrochemical stuff.
(Tomato growing employer)

People go blind, nervous, gasping for air because of the agrochemicals. (Irrigation project specialist)

We've already had cases of poisoning and deaths because of the agrochemicals.
(Irrigation project specialist)

The Ambush product, a Pyrethroid, causes allergies, asthma, and alterations in the nervous system. The chlorates also attack the nervous system, interfering with the ionic exchange that characterizes the transmission of the nervous impulse. As these agrochemicals accumulate in the body, especially in fatty tissues, they can cause deleterious effects in the long run. As the brain is one of the organs that has one of the largest concentrations of fat, the deposits or residues of agrochemicals (the quantity of an agrototoxin, particularly its active ingredient, which remains for a period and varies depending on its chemical characteristics and environmental conditions), are concentrated in this organ and thus compromise its vital functions. Other organs, however, such as the liver and kidneys, can also be harmed.

Because fatty tissue is the main accumulator of agrochemicals, the problem is more serious in the female body. Although no relevant information was found, it is important to mention that women have more fat proportional to the total weight of their body than men do. As this extra fat is distributed throughout their whole bodies, and concentrated in the breasts, women in general and especially rural working women may well be more affected by agrochemicals.

Furthermore, pregnant women gain 4 extra kilos of fat during pregnancy, which represent a reserve of calories that can be drawn on later while breast-feeding. These extra volumes of fat in the female body mean that women are capable of accumulating much larger quantities of agrochemicals in their bodies. Bearing in mind that the brain of the fetus undergoes its greatest development before birth, the effects of the agrochemicals can be irreversible delaying, for

example, the development of the child as is shown in the statement of one woman interviewed in the survey area:

I work in tomatoes all the time, including when I was pregnant. I think that this harmed my child 'cause he is now more than 2 years old and still cannot walk. (Woman tomato worker)

The marks left by agrochemicals in children of the workers have also been observed in other regions of the country. In this way, "in the south of the country, for example, there is a growing number of babies who have been born without a brain (anencephalic) in areas where agrochemicals have been intensively used like Uruguaiana in the state of Rio Grande do Sul, where in the month of February 1984 alone three cases were registered" (Bull and Hathaway 1986, p. 56). An epidemiological survey dealing with congenital anomalies in the Passo Fundo region has demonstrated that there is a positive correlation between the occurrence of congenital anomalies in the children of agricultural workers and the use of agrochemicals in the plantations.

According to the same survey, from 1983 to 1986, 300 cases of congenital anomalies had occurred in Passo Fundo (Rio Grande do Sul). This number represents an incidence of 4.3/1,000 in newborns, which means at least twice what is considered the normal incidence. All the newborn children who showed these anomalies were of rural workers, almost all the mothers (94.2%) were under 30 years of age. Fifty percent of the mothers had direct or indirect contact with agrochemicals, mainly during the first third of pregnancy. The remaining 50% were also exposed by drinking water and eating food that had been contaminated with agrochemical residues and by other environmental contaminants.

In general, women irrigation workers of the Northeast are aware of the negative effects of agrochemicals to their health, especially of their immediate consequences. Few of them, however, are aware that these materials can be harmful in the long run. In the treatment of illnesses, these women resort to "medicine from drugstores," are very often self-medicated, and as a second alternative they resort to "homemade medicine", measures which evidently do not depend on the official service of medical assistance.

The public health service is obviously inadequate. Every day there is news of the dramatic situation of countless people who are seeking these services. Faced with such a situation, various considerations have to be made in case of illness in relation to the treatments that the patient or his family need. They are influenced by the type, duration, and seriousness of the illness, the availability and access to the public health service, and their financial situation. Some of these considerations are raised in the statements of women workers interviewed:

When I fall ill, if I have money, I buy medicine at the drugstore. If I don't, I take a homemade medicine. Praying helps to cure headaches but praying is no good for other illnesses. (Woman tomato worker)

If I've got a cold, I take lemon and an aspirin. When I go down with something a bit more serious the enterprise helps out. They supply the medicine. Later it is deducted from your wages. Sometimes women do not get better and come back to work to make money to eat. Others can't put up with working and are taken care of by their family. (Woman sugarcane worker)

If my child gets sick and I see that it can be cured with herbal tea, I give it to the child. If the kid has a fever, I give eucalyptus with an aspirin. When the child has something more serious, I buy medicine in the drugstore. (Woman tomato worker)

Another consequence of the deficient public health service can be determined due to the existence of the private drugstore "filling a gap." In this case, self-medication occurs. The pharmacist or even the counter assistant "prescribes" medicine according to the description of the symptoms by the patients themselves. Apart from the possibility of a wrong diagnosis, financial difficulties can lead people to buy medicines in insufficient quantities to get fully cured, which is especially dangerous in the case of antibiotics, and can not only aggravate the illness but increase the expense.

During the growth and development of modern medicine — due principally to the discovery of antibiotics during the World War II — the marginalization of traditional or popular medicine, which began at the beginning of this century, happened while "modern" medicine was consolidated. As modern medicine is strongly linked to the dominant political power structures and better represents economic interests than social ones, public resources are generally applied and invested in a way that mainly serves those interests.

Consequently, popular medicine has stagnated. As such, it is no longer capable of absorbing the new demands created by modernization and has lost status and the confidence of the general public. As one woman interviewed said:

I rely more on herbal teas. Long ago I only took herbal teas and they were great. But nowadays even when they have a headache ordinary people go to the doctor. (Woman tomato worker)

The collaboration of modern medicine with political and economic powers can be seen in the irrigation areas, especially in the projects in which the firms supply "medical assistance." Instead of "dealing with" or reporting to the authorities the obvious causes of the illnesses that are mainly the dangerous working conditions, this type of service is limited to treating the illnesses as if these were workers' problems. In this way, this service becomes instrumental to the employers' economic interests. This is manifested by the statements of the women workers interviewed:

When I fall ill, I buy medicine from the drugstore and take it. In the enterprise, the doctor makes it difficult for us to obtain a medical report. Sometimes they give 2 days off. A woman colleague fainted in the plantation and was given first aid in the firm. The doctor gave her an injection and ordered her to go back to work. (Woman sugarcane worker)

I don't like going to the doctor cause I've got to wait a long time before being seen. I only go to the doctor if I'm desperate. I've already asked the firm's doctor if I can take a spine X ray but he said that I didn't need one. He's only there to make us work. (Woman sugarcane worker)

To avoid the upset of returning to work under the firm's doctor's orders, even if they are not cured, the women said they preferred self-medication to the enterprises's medical service. It is common for them to take to their workplace their own medicines for headaches, indigestion, migraine, diarrhea, etc.

In addition, those interviewed said that if they go to doctors not belonging to the enterprise and are advised to take some time off work, this decision is not accepted by the enterprise, which only takes the certification of "their" doctor into consideration.

Given the existence of various health systems that are not always adequate or interconnected, the underprivileged population very often "alternates" between the alternatives offered in search of medical assistance. This "alternating" process can cause undue exertions and tensions that upset the well-being of these people. The lack of confidence in any of these systems is one of the most severe problems facing these irrigation women:

When I get ill, I take herb tea, I buy aspirin. If I don't get better, I go to the doctor. I was working in irrigation [and] I got diarrhea, fever, and a headache. So I went to the doctor to get a prescription. (Woman sugarcane worker)

I am scared to get medicine from the drugstore cause the doctor once gave me one of these and I ended up poisoned. (Woman tomato worker)

When I get ill, I take a homemade medicine [herbal tea with aspirin]. The firm's doctor only gives you tablets that are good for nothing. (Woman sugarcane worker)

When I get ill, I first take leaf medicine or go to the faith healer. If none of this works out, I go to the hospital. (Woman tomato worker)

Sometimes I ask my kids to say prayers for me but usually I take medicine from the drugstore. (Woman sugarcane worker)

When someone at home gets ill, I take them to the firm's doctor. Most of the time I prefer to make tea with Anador [an analgesic]. (Woman fruit worker)

Effects on Maternal Health

According to the distinctive characteristics of the female reproduction process, women are considered vulnerable in health terms. In contrast to the word "weak," "vulnerable" refers to the greater possibilities of having health problems. Although pregnancy, delivery, and breast-feeding make up a normal and healthy process, these become problematic when critical elements in the environment are lacking or are inadequate (Women, Health & Development 1985).

The demands of the different stages of maternity affect women's health, particularly when women are not well nourished. In addition, a large number of pregnancies and short birth intervals raise health risks for women and their babies, thus increasing the mortality rates.

Young women among the rural workers in the Northeast, both in traditional crop-growing and in irrigation areas, exhibit different experiences whether as to pregnancy, miscarriage, breast-feeding, or contraceptive practices. Women workers in irrigation areas get pregnant 6.3 times, whereas those of the dry lands 7.6 times. The lower birthrate among irrigation women may be explained by their choosing to have children later as well as by their greater use of contraceptive methods, which is partly influenced by wage-earning work.

High indices of pregnancy in women in a precarious state of health increase the risks to their lives and their babies. Among the various possibilities, special attention should be given to miscarriage. In addition to being an immediate health risk, miscarriages have a synergic effect when adequate family planning is absent. This increases the risk of another precocious pregnancy, which aggravates even more the woman's precarious health.

According to survey data, 41.6% of women in irrigation areas have already been through a miscarriage compared to 33.3% of women in the dry lands. Although the place of work has an effect on the proportions of women who have a miscarriage, its principal causes in the women's view are "weakness" and accidents caused by the use of medicine or a fall. Other reasons, however, that explain the occurrence of miscarriages, like accidents at work, were only mentioned by women in irrigation areas. Abortion was mentioned by 8.1% and 3.1% of women in irrigation and dry lands areas, respectively.

The survey revealed a low index of abortions. This percentage is certainly not accurate for abortion is considered a crime by the Brazilian law. Moreover, statistics presented in the World Health Organization (WHO) report reveal that the number of interrupted pregnancies in the country is greater than the annual birth rate. This makes Brazil the world record holder in induced abortions (*Jornal do Brasil* 12 April 1990).

"Weakness," which, according to the survey, is the principal reason for miscarriages, is confirmed by information from a public hospital in one of the municipalities in which the survey

was carried out. The data supplied by this hospital show that the miscarriages registered are, for the most part, caused by women's malnourishment. Maternal malnourishment and nutritional anemia, common problems in the Northeast, increase the risk of miscarriage. Moreover, malnutrition represents greater risks for miscarriage than an inadequate diet and infectious diseases. The energy spent in hard physical work is also an important factor as the following statements show:

There are pregnant women who can't get used to the work and have miscarriages. I think it's also because they can't eat what they want. (Woman tomato worker)

Some women have miscarriages because of the heavy jobs they do. (Woman sugarcane worker)

During pregnancy, the reduction of physical activities is very important, above all in the final 3 months when the weight gain of the fetus is crucial. Most mothers in the surveyed area, however, do not restrict their physical activities during pregnancy and work until the 9th month. Keeping up these activities brings consequences that, apart from the risk of miscarriage, include premature birth, low weight of the newborn, complicated deliveries, and breast-feeding problems.

During pregnancy women must gain, according to specialists on the subject, 20% more than their normal weight as this is important for the growth and development of the fetus and the amount of breast-feeding. This weight gain depends on the quantity of fat that women accumulate during pregnancy, an accumulation that can represent a physiological mechanism to store energy and to anticipate the needs that breast-feeding later demands (Slothouber 1982). The accumulation of fat in the first 2 trimesters protects the fetus against possible deficiencies in the last 3 months when the demands of the fetus are at its highest.

As most pregnant working mothers in the surveyed area continue their activities until the end of pregnancy, it is possible that they do not manage to accumulate the weight that they need to and, consequently, accumulate little or no fat while other nutrient reserves are diminished or even exhausted. In this case, the negative consequences for breast-feeding may include the reduction in the amount of milk that the mothers have the capacity to produce and the duration of the breast-feeding period.

Despite this, 72.6% of the total working mothers with children less than 6 months old were breast-feeding at the time of the survey. The other mothers with children of this age had already stopped breast-feeding or had never breast fed, almost exclusively because they claimed they "had no milk"; this claim was more widespread among the irrigation women. Irregular breast-feeding affects the production of milk as much as the duration of giving milk, for both are linked in directly to the stimulation of suction and to the frequency and duration of breast-feeding sessions. Long intervals reduce and ultimately stop milk production.

Looking further into the question of breast-feeding, the fact of "not having milk" as a reason for not breast-feeding has been demonstrated by various studies as a generalized response not just in Brazil but also in many other parts of the world (Cukier 1984; Slothouber 1982, 1984, 1986; Spindel 1984; Van Esterik and Greiner 1981).

In the surveyed area, 52.34% of the women who were breast-feeding, or had already breast fed, recognized that wage-earning work complicates breast-feeding. In monoculture areas where seasonal work is relatively less predominant as has already been shown in this study, 57.4% of mothers believe that wage-earning jobs represent an obstacle to breast-feeding children, whereas in the multiculture area this index falls to 40.7%.

The differences in the percentages seem to be associated with how long these women do wage-earning work and the time available for maternal breast-feeding. Thus, those who work for 12 months and have less time to breast-feed their children see wage-earning work more as the major stumbling block than women selling their labour force sporadically.

In fact, remunerated work, aside from creating obstacles for breast-feeding, also causes women to stop doing so because of the working conditions that are generally offered to women. In the areas studied, the precarious working conditions that compromise women's health, in addition to the lack of respect by employers for legislation that protects children until they are 6 years old, do not permit regular breast-feeding. This occurs not only in the agrarian sector in the Northeast but also in the remaining sectors of the economy. The absence of nurseries is evident in both enterprises and public sector agencies.

The importance of breast-feeding for children's health has been demonstrated. Maternal milk protects children against malnutrition and many diseases. When living conditions are poor, infant morbidity and mortality are linked to the precocious cessation of breast-feeding. Vast pro-breast-feeding campaigns launched in the last two decades have emphasized the importance of babies being exclusively fed on maternal milk in their first 4 months of life.

This has not given rise, however, to any significant results in the case of babies whose mothers are workers and poor. No other result could have been possible considering that working conditions have not changed according to the special needs of pregnant women and newborns for the laws that give time off for breast-feeding are disregarded.

The use of contraceptive methods is widely practiced by women and, to a much lesser extent, by men. In the rural Northeast, birth control is practiced by women workers of the irrigation areas on a much larger scale than by women in traditional crop growing as Table 2 shows.

The indices of sterilization are high considering that these women, in addition to being rural workers (who normally have more children than urban workers) are found at the bottom of the social pyramid and, therefore, without the financial means to pay for surgery. In Pernambuco, the situation is similar to that of the entire irrigation area studied for, in this state, sterilization reaches 60% in women of child-bearing age, whereas the national average is 49%.

Table 2. Working mothers 15-49 years old using birth-control methods.

Methods	Area of Employment			
	Dry lands		Irrigation	
	Total	%	Total	%
Sterilization	8	44.4	153	57.1
The pill	8	44.4	102	38.1
Vaccination	1	5.6	2	0.7
Rhythm method	1	5.6	3	1.1
Coitus interruptus	—	—	3	1.1
Others	—	—	3	1.9
Total	18	100.0	266	100.0

Source: Survey FUNDAJ (1988/89).

In the irrigation areas, sterilization emerged before the 1980s. At that time, 10.9% of the irrigation women had this operation, whereas no women in the dry lands had done so. Since 1980, however, the "mutilating" process has been practiced increasingly in the irrigation area for diverse reasons, among which is the influence of wage-earning work. Women in irrigated and dry land areas were sterilized between the ages of 15 and 19 years, and between 20 and 24 years old, respectively.

The reasons given by these women for sterilization were "lack of financial resources," "illnesses," "I don't want to have more children," and "other children were born by caesarean." Women of the dry lands pointed out as a fifth reason "the fact that women of the municipality are having their tubes tied," which demonstrates their total unawareness of the action carried out.

Irrigation women choose sterilization at the command of capital, whereas those of the dry lands think it is a fashionable thing to do. The survey data show that 66.7% and 37% of the irrigation and dry land women, respectively, indicate "financial considerations" as a reason for sterilization.

"Illness," the second reason mentioned (30% in the two surveyed areas), exceeds the proportion of mothers who chose to be sterilized because they "did not want to have more children." It appears that illness as a reason detected may include illnesses created by the doctor to justify sterilization because this would increase his earnings.

Likewise, it is known that most caesarean deliveries, although unnecessary, are principally carried out for the profit motive, and profits are considerably increased when sterilization is carried out at the same time. As Faudes (1987, p. 20) says, "sterilization is one of the best and most frequent sources of income for the doctor who is usually badly paid by the system."

The high index of "illness" as a motive claimed by the women for sterilization can also be explained by the fact that this type of surgery is not always indicated in the hospital records as sterilization but, rather, it is recorded under the name of some illness. This was stated, for example, in the public hospital of one of the municipalities surveyed where the proportion of women registered as being "ovarian cyst" cases was considered high in relation to the other registered illnesses.

The explanation for this, according to a hospital administrator, is that tube-tying cases are registered as "ovarian cyst" to avoid inspections. It was revealed in this hospital that, during the period from August 1988 to August 1989, 251 women between the ages of 20 and 49 years were registered as having various illnesses. Of this total, 40.9% were registered as being "ovarian cyst" cases when, in fact, they were sterilization cases. In this context, it must be highlighted that the misregistering of this procedure may have the consent of patients who want their tubes tied as well as verifying the financial benefit of the doctor responsible for the "illness" certificate.

The survey reveals that tying tubes was principally carried out on women working for firms that hire most of their women staff on a "permanent" basis. In these irrigation firms, 40.5% of the women interviewed had been sterilized, the figure was 15% in the remaining irrigation enterprises.

The high rate of sterilization cases in the most capitalized irrigation enterprises, if compared to those of women working in small-scale enterprises, can partly be explained by the practice of sterilization being indirectly encouraged by rural employers, a tactic that is equally adopted by Brazilian urban business owners. The following statements show that this type of surgery is encouraged:

They hire women of all ages here, young and old. But they won't accept pregnant women or those who do not have their tubes tied. (Woman multicrop worker)

Women who are not going to have any more babies are preferred in this firm. The first question they ask is if you've had your tubes tied. (Woman sugarcane worker)

The boss prefers women who have had their tubes tied. (Woman tomato worker)

This year [1988] it seems that there were 20 pregnant women in the firm. They [the owners] did not think much of this and advertised on the radio that they only wanted men workers or women who had their tubes tied. (Woman sugarcane worker)

The preference is for menopausal women or those who have had their tubes tied. (Woman sugarcane worker)

This year [1988], due to maternity leave, which women have [guaranteed in the Constitution], they only want old women or those who have had their tubes tied. (Woman sugarcane worker)

The time at which the first part of the data for this study was gathered, late 1988, coincided with the promulgation of the new constitution, which widened the rights of women and mothers. This new legislation immediately moved business owners to increase their encouragement for female sterilization despite the inefficient role of the state in supervising the implementation of labour legislation in the rural areas.

The pill appears as the second most adopted contraceptive method by the working women interviewed, and it predominates in the youngest (15–19 year olds) group. Those who are 20 or older, however, stop the use of the pill and turn to sterilization. The use of the pill by women in the two areas studied is roughly the same. This can partly be explained because of the possibility of self-medicating the pill, which is easily acquired in drugstores.

Although fertility in Brazil is mainly regulated by sterilization, in more developed countries, of the 70% of women who adopt some birth-control method, 7% choose female sterilization and 13% use the pill. Furthermore, "other methods" occupy first place and correspond to a total of 46% in these countries. Among these methods the use of a condom corresponds to 13% and male sterilization to 4%, whereas 25% use other practices such as coitus interruptus, periodic or total abstinence, and methods in accord with local customs (Berquó 1989). These data not only reveal a more diverse use of different contraceptive methods in comparison to Brazil, but also that these "other methods" largely represent "male methods" such as coitus interruptus, condoms, and vasectomies.

The almost total absence of male methods, above all the coitus interruptus and condom, from the scenario of fertility control in Brazil is a distinct phenomenon, although it is rarely recognized as such. It is important, however, to keep in mind that there exists a lack of participation and, consequently, of responsibility by Brazilian men in regulating fertility today and in the past. Since modern family planning was introduced in the country, the nonexistence of a tradition of male participation in birth control practices has been one of the main factors leading to enormous distortions in the supply and demand for birth-control methods.

The pill and female sterilization, the prevailing methods, involve considerable health risks. The side effects of the pill are many, among them depression, swelling, allergies, mycoses, and other genital infections. As the pill may cause alterations in the natural functions of the vagina by reducing and destroying the natural defence mechanisms, the risks of local traumas and infections increase.

The risk of exposing the cervix to carcinogens must have increased with the destruction of these natural defensive mechanisms. Consequently, the pill may be an accomplice in the increase of the index of cervical cancer, which has been observed in many areas. Also, the use of the pill is restricted by various existing conditions and must not be used by women with vascular disease, embolic thromboses, anemia, or diabetes. Furthermore, 15% of women who use the pill become diabetic or prediabetic and users of the pill must take the glucose tolerance exam at least once a year (Greer 1984). In addition, the pill is a drug that needs careful and professional guidance and monitoring.

Despite its possible deleterious effects, the pill is available in drugstores, whereas its distribution by family planning official bodies presents serious deficiencies concerning guidance and monitoring. As the following statements of the women interviewed reveal, there exists an awareness among the great majority of the women that the pill "damages" their health. Such a state of affairs illustrates the lack of options of these women as to contraception:

I took the pill for 8 months. I bought the pill in the drugstore with no medical guidance. During the time that I took the pill, I tried eight brands. One gave me an empty feeling in the stomach, others a headache, others hemorrhaging, and yet others constipation. The pill does you harm. Some women prefer to have a rotting uterus than to have children. The pill dries you up or makes you fat. (Dry lands woman worker)

The pill is good for some women and not for others. Women who take the pill even when it doesn't agree with them must want to die. (Dry lands woman worker)

The contraceptive harms women. I once took it and my body itched, I felt I was burning up, my body swelled up and I had discharge. I took it for 3 months. (Dry lands woman worker)

The pill gives you cysts in your ovaries and causes cancer. Women take the pill because they like it. (Woman sugarcane worker)

In general, I think the pill does you harm. I personally take it and don't feel a thing. Some women get ill because of the pill but they take it because they don't want to have any more babies. (Woman sugarcane worker)

I think the pill damages your health. Many women take it because their husbands want them to. Others are scared to get pregnant. (Woman rice worker)

I never took a contraceptive. I have 10 children. I think that women who take the pill get ill. I never took the pill because I was afraid to. (Woman rice worker)

I'm taking the pill at the moment, I buy it in the drugstore. The doctor is prescribing it. I've already taken the pill off my own back and it didn't agree with me. The pill that I take today doesn't do me any harm. I've never felt anything. I take it correctly. (Woman tomato worker)

In contrast to information about the pill, the risks and consequences of female sterilization are rarely publicized. Due to this gap in information, sterilization continues to be seen as "innocuous" by professionals and other users.

Final Reflections

Women's help in agricultural activities is transformed into work at the moment when capital enters the countryside and calls on them to participate in the labour market. What characterizes work as "help" is the discontinuity of agricultural activities in favour of domestic chores, traditionally women's responsibility, at times when a choice has to be made between the two.

Women are generally hired to undertake temporary activities, whereas capitalists prefer men to perform permanent activities. This differentiation can be associated with the ideology of heavy work for men and light work for women as well as the tradition of country women working as family helpers.

Mechanization has reduced the seasonal unemployment of women in monoculture areas when compared with areas that have adopted simultaneous cycles of crop growing. Women subject themselves to any kind of work because they have more responsibility for the family. Besides this, women have been subjugated in relation to men whose presence limits the job opportunities for women.

Due to prevailing ideology, women undertake light tasks, less specialized ones, on account of their fragility, which limits them to the domestic sphere. Wage-earning work does not exempt women from domestic chores and their working day is, therefore, longer. This working day begins at dawn and does not finish before 9:00 p.m.

Northeast rural firms who include women in their contracted workforce have a deficient infrastructure. Bathrooms and eating areas do not exist. Moreover, the women almost never have personal protection equipment made available to them such as masks, gloves, and boots, which are indispensable for the performance of their activities.

The absence of this equipment causes work accidents and compromises the women's health. In the same way, the water drunk by these women during their rural activities is generally warm and contaminated by agrochemicals and snails and deleterious to their health. As to the agrochemicals, these are almost always judged in an inadequate manner by rural business owners and they compromise the quality of air, water, and flora apart from putting workers' health at risk, especially women's.

The survey shows that women's wage-earning work has made the breast-feeding of children up to the age of 6 months old difficult, a right guaranteed by law. More serious than this is that these women are forced to stop breast-feeding. The use of birth-control methods is widely used in the area and the first choice of women is sterilization.

In view of the foregoing, the following are proposals to improving the rural women's working and living conditions:

- The state, by advertising in the mass media, should make men more aware of their responsibility to share domestic duties with women, especially when women are engaged in employment outside their homes. In this way women may become more efficient in wage-earning duties and avoid even more physical exhaustion with their working day at home.
- Women workers in rural enterprises should get meal tickets monthly and a package of basic foods as a form of complementing their salaries. In addition, they should be provided with adequate bathrooms and areas to have meals. As an incentive, the state could publicize through mass media these improvements undertaken by the firms and advertise their products.
- Rural employers, including the colonists, should supply protection equipment (masks, overalls, boots, gloves, etc.) suitable for the climate and the conditions of workers. Similarly, they should distribute drinkable water in work areas. The small-scale colonists (who have smaller financial resources than rural business owners), should be allowed to include resources addressed to the purchase of this equipment when they ask for credit to offset these costs. The money requested for these purposes should be audited by rural workers' unions, women's groups, NGOs, etc. By guaranteeing these benefits for the workers, the business owner will certainly have productivity gains and the workers will be more encouraged and benefit from better working conditions.
- The state together with grassroots movements should create and inspect workplaces of rural enterprises accused of irregularities, such as requiring women to be sterilized, the lack of time for meal breaks, the prolongation of the working day, etc. Those enterprises found guilty of noncompliance with the legal criteria should be fined in accordance with production levels.
- The state in partnership with the enterprise should install health centres in enterprises with more than 50 employees. It will be up to the state, in conjunction

with feminist and other grassroots movements, to contract the professional (doctors, nurses, dentists, psychologists, etc.) and the administrative staff. At the same time, it will be up to the firms to construct and maintain these health centres. If this is done, the professionals will be able to monitor pregnant women, to control and guide the use of the pill, to avoid employees working when they are ill, to prevent a pregnant woman working until the day she gives birth, etc. On the business owner's side this practice will free him from maintaining the firm's medical team. Avoiding a demographic explosion is the duty of everyone in society as a high population growth rate contributes to the deterioration of sanitary housing conditions and other public services, increases unemployment, compromises limited natural resources, and contributes to the expansion of poverty.

- The practice of abortion should be left to women to decide. Nevertheless, they must be made aware (by professional teams) of the risks as well as be informed about other methods of avoiding pregnancy. The legalization of abortion may also stop back street abortion from putting women's lives at risk.
- The doctors responsible for sterilization should not be remunerated for this surgery. The nonremuneration will certainly decrease the pressure on women to be sterilized.

Chapter 2

The New Rural Family and Agricultural Modernization

Impact of Agricultural Modernization on the Rural Family

This chapter shows the transformations that have occurred in the rural family with the entry of capital into the countryside. To detect such changes, variables common to the families of the traditional agriculture area (also known as dry lands) and of the area undergoing modernization, represented here by irrigation projects set up in the Northeast of Brazil, are used.

The family has been involved in a transformation process and changes in it reflect the fashioning of different ages. Thus, history shows that at a certain period the patriarchal family was made up of primitive communities in which the man performed the activities of hunting, fishing, and internal administration, whereas the woman worked in the fields looking after domestic animals, besides assuming the role of settling human groups (Sposito 1989).

The substitution of communities emerges with the appearance of a class society and the institution of private property, which created the conditions for exploitation. This was the point at which the patriarchal society was erected. The basic outlines of this family defend paternal authority and that of the man over the woman, monogamy, the indissolubility of unions, the legitimacy of progeny, and the sexual division of labour.

The alleged authority of man, mainly exercised by tradition, is broadened in the bosom of the family, for the husband imposes his dominion on the family and the older impose themselves on the younger. As to monogamy, the indissolubility of unions and the legitimacy of progeny, which constitute the formal characteristics of the family, are established with the principal objective of preserving patrimony.

The division of labour based on sex has as its basic objective a moral order, that of avoiding the contact of women with male strangers, for it is up to the man to carry out complex and heavy tasks like labouring in the fields and those related to his role as leader. In this context, it is up to the woman, in addition to domestic work, to help her husband in his toil, to preserve the techniques of weaving cotton and the art of working clay for the manufacture of food containers (Gomes 1991).

In the patriarchal family, marriage is a paternal project in which economic and moral criteria prevail, which include female virginity with the objective of guaranteeing the family consanguinity in paternal inheritance. Thus, as it can be observed, there are indications of close

links between the patriarchal system and patrimony, for both are handed down from paterfamilias. Nevertheless, the patriarchal system is restricted to the family environment.

On the whole, the patriarchal family safeguarded by the state and the Catholic Church is a universal institution. With the evolution of society, this social institution has basically varied in accord with the trajectory of economic systems and political regimes. Thus, the social dynamics have caused transformations in the family where values are questioned, habits and traditions fall into disuse, and alternative family organizations are adopted. These transformations probably occur because of the environment created by the capitalist regime due to agricultural modernization.

It is important to note that the Brazilian rural family in the Northeast region has been significantly affected by the changes that have resulted from the agricultural modernization process (Table 3). In irrigation areas, 23.3% of the family members are lodgers. This percentage is considered high in view of the 9.3% shown for the dry land families. Such a finding tends to show the redefinition of the extended family. This new family increasingly maintains a number of lodgers yet, in the role of consumers, for the family no longer preserves a link with the land.

The fact of cohabiting with relatives arises from the precarious financial situation experienced by these wage earners who are led to adopt accommodation alternatives. The scarcity of resources to pay rent added to the high costs of urban lands weighed in the decision of 9.3% of those "opting" for lodging with relatives.

It is worth pointing out that the family formed by a single spouse, normally the woman, who in the irrigated area represents 17.9% of the women interviewed, favours cohabitation with relatives. In this family the lodgers are mainly brothers and sisters and sometimes relatives and/or unmarried or divorced friends who get together. This is because on their own they cannot manage

Table 3. Family composition of the women interviewed in the irrigation and dry land areas, 1988 (percentages).

	Dry lands	Irrigation	Irrigation		
			Men	Women	Total
Husband	14.6	10.2	100.0	—	100.0
Interviewee	18.8	17.8	—	100.0	100.0
Children	57.3	48.7	51.7	48.3	100.0
Lodgers	9.3	23.3	49.2	50.8	100.0
Total	100.0	100.0	100.0	100.0	100.0

Source: Survey FUNDAJ (1988/89).

to meet basic expenses such as a furnished rented accommodation. This alternative is rarely adopted in the dry lands for in this area the cohabitation of relatives in practice happens only in cases of widowhood and old age.

Data taken from the survey show that in this region workers' children on getting married do not always remain in their parents' home. Such information suggests that apart from the growing concentration of land, rural landowners of the dry lands area bearing in mind the intermittent need for unskilled labour, welcome these new families onto their property.

The unfolding of the family on the extended model has been occurring in a relatively harmonious way as much in the dry lands as in the irrigated lands. At the moment, the rural family does not come across as being excessively numerous. In this aspect, the irrigated and dry lands display averages of 5.6 and 5.3 members per family, respectively, which are tending to fall because of the unregulated birth control adopted by the women workers of these areas, despite the nonexistence of an official policy for family planning.

This being so, the birth-control methods used in the irrigation and dry lands areas by 48% and 36% of the women, respectively, has contributed to the generation of an average 2.4 and 3 children per family. These averages are considered relatively low if compared, for example, with how things are in the state of Pernambuco in which the estimate for the 1980s and 1990s is 5.4 children per woman.

In the irrigation area the low average number of children per family is perhaps influenced by later formal or informal marriage. The survey data showed that in this area 48.6% of women under 30 years of age listed themselves as single under marital status, whereas in the dry lands only 8% of the women in the same age were single. This significant difference probably occurs because the irrigation women contribute to family income and for this reason their continued stay in the family is important, to the contrary of dry lands women who are considered family "helpers" as they do not contribute in a direct way to the family budget.

The reduction of the number of children in the rural area surveyed can be partly explained by the growing adoption of birth-control methods. These methods have undermined the population's religious habits, thus challenging the powerful Catholic Church, which defends natural methods. The state, however, has avoided confrontation with the Church as far as the use of contraceptives and family planning are concerned.

Nevertheless, in relation to the dissolution of marriage, these institutions have confronted each other. In this way the state, associated with social pressures, has legalized divorce, thus upsetting the Catholic doctrine that refuses to recognize divorce. By adopting such an attitude, the Church may be rejecting 12% of the women in irrigation areas who are divorced or separated (see Table 4).

This percentage of divorced women is high considering that they belong to the rural area, a recognized redoubt of the Catholic religion. This redefinition of marital status seems to have

Table 4. Marital status of women in the irrigation and dry lands areas (percentages).

Marital status	Dry lands	Irrigation
Single	9.4	25.7
Civil/religious wedding	62.4	45.7
Lives with partner	16.5	11.6
Separated/divorced	1.2	12.0
Widow	10.5	5.0
Total	100.0	100.0

Source: Survey FUNDAJ (1988/89).

some relationship with wage-earning women's work for in the dry lands the registered cases of divorce are relatively insignificant. This type of marital status that prevails in the area undergoing modernization is generally adopted by families in which women reject bigamy and maltreatment by their husbands. This is certainly because they are wage earners and, therefore, are in a position to "sustain themselves," unlike the women of the dry lands whose financial situation does not permit them to maintain themselves and their children.

The women workers of the irrigation area, however, even though they enjoy the right to "sustain themselves," rarely take the initiative of moving out of the family home and ask for divorce, as is normally done by men. The woman, unlike the man, in cases of separation has to enter into continuous offensive arguments and adopt sexual rejection to get her husband out of the home.

This courageous attitude of the wage-earning woman is also associated with the process of the woman worker finding her place in society, for divorcees generally make up the bottom section of the family income pyramid.

The survey data show that 44% of married women workers are concentrated in the bottom section of family income, whereas divorcees add up to 76% and have an income even lower than that of widows. Moreover, it is important to note that 30% of women interviewed from the irrigation lands are divorced, widowed, or informally married.

Obviously, many of these women are concentrated in the lowest section of the family income pyramid. This ranking can be explained in that they only possess one single source of income and by the very inferior situation of women, which generally has an effect on salary, despite this being contrary to the capitalist ideology of equal treatment as far as workforce.

In modern agriculture, the family consists mainly of young people concentrated in certain age groups. Thus, although 56% of the surveyed population of this area is under 14 years old, in the dry lands this figure is 43%. In addition, the population under 30 years of age represents 81% of the population in the irrigation area, whereas in the dry lands it is 67%.

When gender is considered, however, the distribution of age by sex is relatively similar in the dry lands, whereas the female population is predominant in the irrigated lands up to 50 years of age. Above this age, the distribution by gender is equal. It is appropriate to note that workers in modern agriculture over 10 years of age have a similar distribution according to sex. Although 64% of the male population is remunerated, the female population reaches 60%.

Women under 44 years old represent 82% and 54% in irrigation and dry lands areas, respectively; the corresponding average age is 33 and 42. The average age in the modernizing area, however, may be considered high, given that the mode was 20 years. This difference can be explained by the advanced age of women workers who render services to the colonists. Modernization selects young workers able to bear high levels of exploitation. Women are included in this context and they usually work until they are 44 years old and, after this limit, possibly begin to be rejected by the labour market, which is natural in the capitalist system.

The female population performs the functions that are attributed to it. This behaviour is frequently characterized by patience, skillfulness, and other qualities inherent in women, which lead landowners to choosing a female workforce. These qualities, however, seem insufficient on their own to justify the acceptance of women's work by the market. Besides these profitable qualities what de facto seems convenient to capitalism is to transform women into wage earners to expand the consumer market.

Despite having a good reputation in the labour market, women usually enter remunerated activity at an older age than men, and reckon on the annoyance of leaving this market at a younger age than male workers. As to the later entry of women into the labour market, it is supposed that this is traditional for young girls first to dedicate themselves to household chores, as the following statements show:

Boys have got to begin working first because they don't help at home. If they're not put to work in the fields, they become tramps. (Woman tomato worker)

Round here, boys go to the fields and the girls do the housework. That's our custom. (Dry lands woman worker)

A 5 year-old boy has to begin helping his father in the fields. Boys in the fields help more than girls because girls help first at home. (Woman tomato worker)

The reason women leave the labour market before men is, from the owner's point of view, of an economic nature. The cultural and economic reasons observed in the foregoing associated with women leaving the labour market at the age of 25 (perhaps because of marriage or motherhood) may contribute to the reduction of women's wage-earning years (Bruschini 1986). If the labour market discriminates against women as to age and reproduction, the situation is no different in irrigated agriculture. Women enter the labour market when they are around 13 and

their participation begins to decline after they are 44, which is coincidentally the limit of the reproductive cycle.

Agricultural work, however, begins for men when they are around 10 years old and remain working until they are about 50 years old. These figures, however, are different in the dry lands. In this region, women begin to undertake agricultural duties at the age of 10, on average, and this participation stretches out until they are around 55. For men of this same area, agricultural duties absorb children when they are 8 years old and they remain working as long as their physical strength permits.

As to the reproduction period in the irrigation area, reports of women workers and managers of enterprises regarding the denial of jobs indicate that women of childbearing age are rejected because they have not been sterilized. These revelations, probably true, are associated with the enactment of the 1988 Constitution, which widens the labour rights of women.

It is perhaps a question of circumstantial decisions of landowners for women are on the labour market because they certainly provide profit to the employer. Thus, the manager of one of the large enterprises declared that the participation of women, even with the increase in labour taxes, would be indispensable to the enterprise.

Under such circumstances, women protect themselves in various ways to avoid being thrown out of work in the period that precedes pregnancy. This is why they often work until the last month of pregnancy and return to the enterprise about 15 days after giving birth. To guarantee their return to work, they generally contract a third person to look after the baby, thus making sure of their regular attendance at work. Equally, women wage earners who render services for the colonist (small-scale landowner), sometimes take their baby to work even during the breastfeeding period and place them down on hammocks under the trees to protect them from the sun.

In this way, women make great sacrifices to remain working. Even though worker rights are not faithfully respected in urban areas, it is much worse in the rural areas, especially when these rights refer to women and children. Thus, the great majority of employers, free from the pressures of the Ministry of Labour, adopt strategies according to their interests.

On the one hand, the colonist who is more "permissive" exempts himself from labour obligations and ignores the rights of workers by not, for example, setting up a nursery. On the other hand, the big business owner will take advantage of the inertia of labour legislation and social security when he contracts the services of women workers "on leave" until their "official return to work." This way, the landowner avoids contracting a new inexperienced worker who is not familiar with the work. It was possible to observe in the course of the study this and other artifices used by employers in disobedience of labour legislation.

In the irrigation areas, the educational level shows differences between the families under analysis, to the contrary of the dry lands area where education is less diversified. Thus, some

members of irrigation area families, in addition to a formal education, have been undertaking vocational courses at a technical level in nursing, teaching, business administration, etc.

Despite the exhausting work that it imposes on the workers, irrigation creates opportunities for wage earners to climb up a certain social ladder:

When I began to work in irrigation I thought that I would not be able to put up with working the whole day at this job in the sun and studying at night. But if I had stopped working I would have had no other way to support myself. If I'd stopped studying, I'd have felt sorry about it later. Today I'm finishing primary school and I hope to become a teacher, working in irrigation. (Woman multicrop growing worker)

Although irrigation in some ways makes the participation of workers in formal education easy, it does not directly encourage the wage earner to specialize in agricultural techniques, perhaps because of the scarcity of resources in the area.

In the two surveyed areas, an enormous population contingent begins the early stages of primary education (see Table 5). About 70% of the population of the irrigated areas enter primary school, whereas the situation is more serious in the dry lands where little over 15% do so.

The percentage of semiliterate people (those who can only write their name) is roughly the same in both agricultural areas. Illiterate people, who make up 38.5% in the dry lands, are 8% greater than in the irrigation area, which contains more than half of the illiterate population. As far as secondary and primary education in these two agricultural areas, the percentages are 28.5% and 17.3% in the irrigated and dry lands areas, respectively.

Table 5. Level of education of the families interviewed in the irrigation and dry lands areas (percentages.

Level of education	Dry lands	Irrigation	Irrigation		
			Men	Women	Total
Illiterate	38.5	29.6	45.9	54.1	100.0
Can sign name	27.9	23.5	47.4	52.6	100.0
Read/write	16.3	18.4	48.8	51.2	100.0
Primary	15.7	23.3	44.1	55.9	100.0
Secondary	1.6	5.2	34.9	65.1	100.0
Total	100.0	100.0			

As to the question of gender, formal education shows a relatively different behaviour: as the level of education rises women's formal education is higher than men's. On transferring the comparison to women, it was observed that in the irrigation area 78% of the women workers have not had access to primary education, whereas in the traditional area this percentage rises to 93%. As far as semiliteracy is concerned in these areas, the labour market gives priority to absorbing those who can sign their names. This is a type of illiteracy in which one woman of the dry lands qualified herself as follows:

I'm almost illiterate but I'm not completely ignorant. I know how to sign my name. This year I'm going to vote for a new President of the Republic. (Woman sugarcane worker)

Education in the agricultural area undergoing modernization, despite being seen to be far from satisfactory, has advanced significantly in itself and in relation to the traditional crop-growing areas. This does not mean that schooling has ceased to be a privilege of the well-to-do as a significant number of workers have no access to education.

This probably happens because they are trying to sell their labour force to help the family survive and so they abstain from attending school. One can support the popular saying mentioned by some of those interviewed that "(mere) studying doesn't fill anyone's belly." This is another way of saying that formal schooling for these people does not form an integral part of the basic necessities of the rural population. This being the case, the first priority of the worker is to guarantee the minimum level of survival, food, housing, etc., and only after this to battle for education, basic medical needs, etc.

These services, which are normally offered by the state, are in most cases brought into effect when the population asks for them. In the Northeast, where a large section of the population lives in a state of great poverty, it is probable that such services are seldom considered by the population because they do not form part of the basic necessities.

Although the difficulty of the worker in fighting for an education is a fact, the negligence in offering this type of service by those who govern is reflected by the priority given to formal education. In this regard, countries that have overcome their educational deficiencies, like Canada and Cuba, designate more than 7% of gross domestic product (GDP) to education, whereas Brazil devotes roughly 3.5% to this sector. Education is almost never considered as a citizen's right. Every year ordinary people queue for nights on end in public schools and sometimes even in private schools to enroll their children. The opposite is the case in developed countries where the state punishes parents who do not send their children to school. This can even lead to loss of guardianship.

Education in Brazil is scarce and selective, and the greatest burdens fall on the Northeast, which with a third of the country's population, contains about 60% of the nation's illiterate. Even in the advanced areas of the Northeast, illiteracy, despite having been relatively reduced, is still

considered shamefully high. Likewise, it is worth underlining that the situation is more serious for men, who generally have a level of education below that of women. Women, having a higher level of education, have been taking up traditionally male tasks, such as organizing meetings, applying for bank loans, etc., whereas men carry on with tasks that require physical strength as was observed by Nagel (1984) in the rice-growing area.

In advanced modernization areas, such as the sugarcane and multicrop production areas studied, women workers with teaching diplomas, formal training in administration, and qualified to carry out office duties are found in agricultural areas performing activities that have almost no need of professional qualifications.

Education has a direct relationship with income. The private sector, which has a function in the generation of jobs and the family income, is also responsible for illiteracy in the country as the unemployed worker or the worker whose family income is excessively small cannot afford family members attending school. When there is an increase in family income, however, a positive response is observed in the level of education as was the case in the irrigation areas.

There is no doubt that in this area, unlike in the dry lands, public educational services have prospered. There has been an increase in the number of schools and teachers. The reinforcement of public educational services in itself, however, will not be capable of attracting those of school age to attend school with great regularity. Jobs and the consequent improvement in family income may be the prime movers in raising the education level of the population in the area undergoing modernization.

The schooling of the population has generally been affected by the reduced state budget for this sector, and by the poor performance of the private sector as to job creation and direct participation in the creation of schools in enterprises. These factors have been contributing to the privatization of formal schooling and have transformed education into a privilege of the well-off. Thus, the precarious level of education is most obvious in the poorest regions like the Northeast, particularly in its rural areas.

Formal education prepares the citizen for the labour market. This is why the best educated, generally speaking, fill jobs of the greatest economic, political, and social prestige. In the rural area, the position of greatest prestige is filled by the landowners who influence the generation of jobs.

The surveyed women workers and their families normally belong to the lowest social classes who seek work on the labour market in traditional or modern agriculture or both. Some members of the family in irrigation and dry lands areas work in the service sector, mainly in commerce (13%), transportation (4%), and other services.

Moreover, the survey data indicate that men more than women are leaving agriculture. According to data (see Table 6), roughly 11% of members of the irrigation families are engaged in the service sector, and of this total about 75% are men.

Table 6. Women and family members by economic activity sector (percentages).

	Dry lands	Irrigation	Irrigation		
			Men	Women	Total
Agriculture	94.5	85.6	40.8	59.2	100.0
Commerce	0.4	1.9	81.4	18.6	100.0
Services	4.4	10.7	75.5	24.5	100.0
Industry	–	1.3	86.7	13.3	100.0
Transport	–	0.5	100.0	–	100.0
Not working (retired)	0.7	–	100.0	–	100.0
Total	100.0	100.0			

Source: Survey FUNDAJ (1988/89).

Men's shift to other sectors has occurred in the interviewed families working in sugarcane and in multicrops for 25% of the members of these families are employed in these sectors, whereas 2% are in the industrial sector.

The transfer of workers among activity sectors also affects children under 14 years of age, particularly in the irrigation area. Children in the dry lands area generally remain in the agricultural sector. The information from the survey indicates that 10% of this group of young workers undertake semiskilled jobs and act as household servants.

Men and women rural workers sell their labour force mainly in the primary and service sectors. In irrigation, around 60% of agricultural workers are women, whereas in the dry lands this percentage is 45.

In the Northeast, through irrigation, agricultural modernization has encouraged the concentration of women's activities in the agricultural sector. Women who have never before undertaken remunerated activities have begun to sell their labour force. A free choice of work has provided these women with a signed labour card and a wage that, although hardly more than the minimum established by law, very often is greater than that of municipal officials like primary school teachers or telephone operators, and is just like the salary of a commercial employee as was observed in the municipalities surveyed.

From the 1970s, the economic activity sectors have been modifying their requirements as to the gender and number of workers contracted. This is how the industrial sector has substituted agriculture in the absorption of the labour force. As to the primary sector, it increasingly ignores the traditional sexual division of labour by recruiting women to take on tasks formerly performed

by men. Even so, whereas men's work is distributed in a balanced way among sectors of the economy, women are concentrated in the provision of services, social activities, and in industry (Bruschini 1985).

The modernization of the economy has broadened the tasks that, without the use of physical strength, opened the door to women, including in the industrial sector, where the activities were traditionally for men like civil construction. Despite the undeniable opening of the labour market for women, the number of women workers still unemployed is worrying because in the Brazilian family two out of three unemployed are women.

According to Saffioti (1985) "the participation of women in the Brazilian labour market is about 35% of the active labour force. Its positioning in different branches of the economy suffered marked transformations, especially in agriculture, which absorbs practically all women dedicated to primary activities." Table 7 gives a clear idea of women's participation in the three main sectors of the economy.

According to the same source, the percentages demonstrate for a period of almost two decades a fairly moderate increase in the economically active male population (63.8%) and a very accentuated growth of the economically active female labour force (233.5%). These increases are very far from homogenous between economic sectors. The only constant is the rapid growth of women in the economically active population.

In the tertiary or service sector, the male labour force grew 129.4%, whereas the female labour force was almost twice this percentage. In the secondary sector, the growth was 304.9% and 140.3%, respectively. In the primary sector, where the increase in women's participation was less, it was still very high (135.3%) if compared to the negative growth in the number of male workers (-5.1%).

Table 7. Economically active population over 10 years of age by economic sector and gender (percentages).

Activity sector	1970		1980		1989	
	Men/Women		Men/Women		Men/Women	
Primary	91.0	9.0	86.8	13.2	78.9	21.1
Secondary	88.0	12.0	83.2	16.8	81.0	19.0
Tertiary	62.0	38.0	57.0	43.0	51.6	48.4
Total	79.2	20.8	72.5	27.5	75.1	24.9

Source: Saffioti from the 1970 and 1980 censuses and the 1989 National Household Sample Survey.

This survey also reveals that the distribution of the working population underwent profound changes in the period reviewed. In 1970, 44.4% of women were in the primary sector, 17.8% in the secondary, and 37.8% in the tertiary. In 1989, these numbers changed to 24.2%, 23.3%, and 53.4%, respectively, thus showing the same tendency observed world wide of the progressive reduction of people employed in agriculture and cattle breeding. The latter has practically no women working in it. The increase in industrialization in the 1970s produced a substantial growth in the population employed in this sector. The tertiary sector also accompanied the world tendency by absorbing more than half of the workers.

Men and women did not show the same movement in their internal distribution through the main branches of economic activity. In 1970, 50.5% of men appeared as working in the primary sector, 19.8% in the secondary, and 29.7% in the tertiary. These numbers changed to 29.4%, 29.0%, and 41.6%, respectively, in 1989. There was a reduction in the primary sector where a loss in absolute numbers occurred, for this changed from 11,790,360 men to 11,099,766 almost two decades later.

In contrast to what was expected, the use of manpower-saving technologies in industry was not so intense, perhaps because of protection measures in the internal market; this factor permitted an appreciable growth in the labour force employed in this sector. Although with less impetus, the presence of workers in the tertiary sector grew notably and concentrated the largest single percentage of workers.

According to Saffioti (1969), the presence of women in industry has been low this century in contrast to what happened when the industry was mostly based on craft. In the last century, women were predominant in the manufacturing industries and the data from the 1920 census showed their loss of hegemony. Until the industrial leap of the second half of the 1950s, the ratio of men to women in industry was fairly low. It was in the 1970s and the beginning of the 1980s that the participation of women increased significantly in this sector.

Saffioti indicates that in 1970 only 10.5% of women workers were employed in industrial activities. The numbers of women working in industry was relatively small (614,129). This number jumped to 2,608,394 in 1989 or 12.7% of the total of women in economic activities. An increase of almost 305% of women in industry, in the period under consideration, produced a relatively modest effect on the proportion of women employed in this sector in relation to the total. In the tertiary sector, there was 68.7% of women workers in 1970, a number that grew to 72.7% in 1989, which confirms the general tendency of greater concentration in this sector. The primary sector employed 20.8% of active women in 1970.

Despite the significant increase in the absolute number of women in agricultural activities, they came to represent 14.7% of total women workers in 1989. Thus, in relative terms, the reduction of women workers in primary activities, basically in agriculture, was much less than that among men.

On the whole, rural workers receive a salary of small purchasing power in whatever sector they offer their services. These workers, unlike some wage earners whose remuneration relies on supply and demand, are almost always contracted for the minimum legal wage. Very often this wage is not adhered to by powerful landowners who take advantage of the unemployed to pay wages even below the legal minimum. In the rural Northeast, disrespect for labour appears frequently for the average wage of the rural worker is practically one-third of the average wage of the urban skilled worker. Despite salaries of urban skilled workers being greater than their countrymen's salaries, it is considered that this urban/rural difference in average wages also comes from disobeying labour laws.

The rural labour market also shows significant differences as to the absorption of the labour force. In irrigation areas 61% of the population surveyed over 10 years old actively takes part in the labour market. For the dry lands, this figure is 46%. In irrigation areas, 53% of the family members are women, whereas in the dry lands the women's remunerated labour force represents 20% of family members.

In irrigation, the composition of family income shows indications of the shift from extended to nuclear families. In the extended family, the participation of family members takes place at the level of family chores. In irrigation agriculture, husband, wife, parents, children, brothers, and lodgers all contribute to the family income. Wives, who represent 30% of the wage-earning labour force, generate roughly 25% of family income, whereas husbands are 23% of this same labour force and generate 25% of family income.

The irrigation women, although generating half of family income, earn smaller wages than men. The data indicate an average income of \$39 for women and \$47 for men, whereas per capita income is \$17 and \$21, respectively. This unequal remuneration between the sexes, which runs against the philosophy of capitalism, is based on the ideology that women's work is "help" and as such is liable to low remuneration.

Modernization of agriculture contributes to the increase of family income in the irrigation area even without necessarily increasing the absorption of manpower. Thus, in the irrigation area where the average family size is 5.6 people, 2.5 out of 5.6 people are wage earning and generate an average family income of \$107/month. It is important to emphasize that family income varies between the projects studied according to the degree of mechanization adopted.

In the irrigated area of sugarcane and multicrops production, where mechanization is more advanced, the average family consists of 5.1 people of whom 2.1 are wage earners and generate an average family monthly income of \$119. In the tomato irrigated area, where the mechanization adopted is limited and relatively obsolete, the average family has 5.7 people of whom 2.9 earn wages and the monthly income is \$63.

The dry lands, however, show an average family of 5.3 people of whom 3.2 contribute to generating an average family income of \$55.³ The value of work in the dry lands area is effectively lower than in the irrigation area. The consequence is a reduction in the level of consumption.

The dry lands family lives with a monthly "deficit" because it has traditionally lived on the employer's land, exempt from housing and electricity expenses. It spends nothing on transportation because it normally moves from place to place on foot or on animals. In irrigation, although consumption is restricted to the goods considered as basic necessities for the low-income worker, the income of the families shows, in some cases, a surplus over monthly expenses in comparison to families in the dry lands. According to the survey data, however, the majority of irrigation families (52%) also live with a monthly budget "deficit."

The family of the rural woman worker spends in both areas on food, debts, domestic equipment, etc. It is worth highlighting that food is at the top of expenses followed by debts. Debt refers to expenses on credit purchases and borrowed money and it makes up a part of usual monthly expenses. In addition to these expenses, spending on medicine takes a relevant amount from the domestic budget for the rural family is vulnerable to ailments, mainly because of a deficient diet, and it has to resort to allopathy and frequently to self-medication.

It is curious, yet understandable, that more is spent on cigarettes and "cachaça" (sugarcane liquor whose function is also to dull the rural worker's hunger) than on education. In this case, schooling has become secondary to a product that is symbolically of first necessity. As to the reduced value of expenses on education, the population resorts to public schools that sometimes provide school materials and do not require the use of school uniforms.

In the area undergoing modernization, general expenses include housing, looking after children and transportation. In this area, a great number of workers pay rent or installments on houses subsidized by the government. On the whole, these workers live on the periphery of the city, in insalubrious areas of low resale value, in precarious homes, without piped water sewage systems and, sometimes, having electric energy by linking themselves clandestinely to the power system.

The expense of taking care of the children is exclusively the responsibility of the woman worker. Despite being characterized as a relatively low expense, the babysitting of children is common to all the families of workers in all surveyed income classes. The first thing to note is that this expense reveals that women may depend on men financially but it is only a partial dependence until they delegate the babysitting of children to a third person and meet these expenses. Second, such expenditure shows that a redefinition of parental ties is taking place for

³The value referring to the unripe production consumed before the total harvest has been excluded from this income.

these third persons are usually grandmothers, uncles, nephews, etc., who take care of the woman's children in exchange for money.

On the one hand, a major beneficiary is the rural landowner who increases the surplus value through exploitation of the labour force and the increase in the level of consumption and, on the other hand, is exempted from the obligation to maintain a nursery at his expense. This is contradictory to the labour law that requires businesses with more than 30 women over the age of 16 to take care of their children up to the age of 6.

This stance by the entrepreneurs probably affects profits for, when mothers leave their children in places that are not considered appropriate for children, they are potentially not concentrating on the tasks at hand. In the following statements, mothers express their worries as to how their children are getting on during the working day:

It's not worth it to leave the kids and go out to work. We go out to work because we are forced to make ends meet and we go out with heavy hearts. (Multicrop woman worker)

It's not worth it leaving the kids on their own so I can go out to work. I do it because that's the way these things are. (Woman sugarcane worker)

If a woman goes out to work, her children get neglected. They grow up getting up to no good. We work because we have to. (Woman sugarcane worker)

I leave my children with someone else to go out to work because I need to, but it is no good. (Multicrop woman worker)

I leave my kids with other folk, but I am not happy about it. While I'm working, I'm thinking of the kids the whole time. I've no peace of mind. Sometimes I get to thinking that a car might pass by and run over my kids. (Woman sugarcane worker)

It's not worth leaving my kids alone at home. If I could, I would stay at home with my kids but our needs don't let me. If I worked for 8 hours a day, that would be OK but I work for 12 hours and so I've no time to give a helping hand to my kids. (Woman sugarcane worker)

Women rural workers show that they feel guilty about leaving their children to go out and work. This feeling is associated with the nonfulfillment of a task that society has instilled into every mother as being her exclusive responsibility and duty. The caring of children through nurseries under the authority of the state or the private sector has not been widely conceded to workers for two reasons; first, the social programs almost never reach the target population; second, the monitoring of labour legislation is inconsistent and the penalties, when applied, are mild.

Thus, women have taken up social production without having the basic infrastructure available to face up to family and domestic duties that are their responsibility. This is why wage-earning work actually overburdens low-income women workers because very often they do not even have a refrigerator or gas oven that might contribute to reducing the time dedicated to household chores.

Even so, for the woman irrigation worker to take part in domestic expenses means an opportunity for the redefinition of her role in the bosom of the family. This participation opens the door to women having a say in domestic consumption because they may acquire goods and utensils for family use that was formerly almost the exclusive responsibility of men. Similarly, she may influence the socialization of her children, especially the boys who, because they cannot count on the permanent presence of their mother, must learn to carry out some household chores traditionally considered women's work.

The redefinition of the woman's role in the family, which has been promoted by her participation in the public sphere, seems related to the importance that she attributes to her contribution to the family income. This can mean a step toward the recognition of her real value in the family. The following statements give this impression:

I think it's better to go out to work because I can give my kids more [material] comfort. When the school teacher asks them to bring materials I'm able to buy them. (Woman sugarcane worker)

A woman goes out to work because she needs to. She can't sit around twiddling her thumbs expecting her husband to pay for everything [domestic expenses]. (Woman sugarcane worker)

When I get back from the fields there's not a dirty plate in the house. My husband and boys wash up. They iron clothes. Sometimes he [her husband] has friends around to have a drink at home but when it's my time for getting back home he cleans up everything. I only know that he had friends round because things are a bit out of place. He knows that if I find men drinking here, I'll throw them all out.... I work Saturdays and Sundays, I do overtime. I've already got used to it. I don't see work as suffering any more. (Woman sugarcane worker)

I work so as not to be always asking my husband for things. (Woman sugarcane worker)

A woman goes out to work because she needs to. Everything is expensive. The advantage of a woman going out to work is that she's got money to buy things that she needs for her house and for the kids. (Multicrops woman worker)

I work because the family needs me to. If I didn't work the family would have nothing to live on. (Multicrop woman worker)

In our house the biggest income has always been mine. My husband doesn't know the cost of a box of matches. Some days I even give cigarettes to him. (Woman sugarcane worker)

My daughter works in agriculture much against her husband's will. But what her husband earns is only enough to eat. Her husband's always telling her: Sit on your bottom at home, woman! But if she doesn't work what clothes and shoes will they have to put on? (Woman tomato worker)

My entertainment is the mattock. Everything depends on me at home. For some time, I've been more a zombie than a living human being. (Woman tomato worker)

Round here many women wear the trousers. If anybody wants anything you've got to deal with the woman. If the woman spends one or two days away, her man won't ask what she has been up to. The man won't even lend an axe to his neighbour without his wife's permission. (Woman sugarcane worker)

As the foregoing statements show, irrigation eventually favours the family but the fact is that this system as a means of developing capital uses different strategies to increase capital accumulation. Thus, when the work relationship no longer represents the best option for the reproduction of capital, this relationship is redefined and the location of capital is transferred to other regions that guarantee profits.

The landowner adopts wage-earning relationships without (legal) employment links, as in the case of the "boia-frias," because this type of relationship makes it possible to transfer the monetary amounts relating to the unpaid labour taxes to the enterprise's profits. Similarly, in cases where there are possibilities of loss of agricultural production, the "parceria" (partnership) type of labour relationship is frequently adopted in the dry lands area.

In transferring capital from one rural region to another, however, which promises a profit, the entrepreneurs ignore the social consequences. This occurs to the extent that in one region deactivation of an enterprise takes place, which results in unemployment, whereas in another region, small-scale producers are expelled from the lands necessary for the new enterprise's production. Thus, of the range of measures that aim at generating profits, migration of capital is the most damaging option to the worker.

Agricultural enterprises generate a considerable number of jobs, chiefly temporary ones. It is common at the end of the agricultural harvest for a significant number of laid-off workers to resort to the alternative of migrating to guarantee the sustenance of the family in another place. In this way the worker adds yet another hard experience to his life for he very often sets off for

an unknown world and must cross economic, social, and cultural barriers. Rural migration, which is of particular interest to this study, happens above all because of the concentration of land, weather catastrophes, land expropriations, the expansion of agricultural boundaries, and the modernization of agriculture.

Land concentration and agricultural frontiers expansion, unlike weather catastrophes and expropriation of lands, generate a type of subtle migration that is rarely denounced by rural social movements through mass media. Similarly, little is said about migration provoked by modernization of agriculture that unleashes an annual migratory process, the consequences of which are considered bearable by the working population. In the irrigation area, migration takes place in a moderate way, as 57% of families interviewed are migrants.

Except for a few families, this migration is basically characterized as being intraregional, that is, within the Northeast; 94% of these families are landless workers who, with relative success, have managed to establish themselves in this agricultural area. Data show that only 13% of these migrant families have been resident in this area for less than a year.

Migration, from the point of view of the women interviewed in the irrigation area, is an indispensable choice. According to these women workers, migrating means choosing between "the devil (of necessity) and the deep blue sea." Of the families interviewed, 84% expressed the desire to live permanently in their place of origin, as the following statements show:

I've been living in Juazeiro for 7 years. I was born in Araripina. The first time that I left there I went to Missão Velha. I lived there for 12 years. From there I went to Crato. It wasn't up to very much and as a brother-in-law of mine lived here, we came here. When you move to another place, it always costs you a packet because you've got to sell up and, there's no two ways about it, we've got to cough out a lot of money. I don't want to leave here again. Things are not good here, nobody has anything. My children sleep on the floor. In our family, my husband and I both work, but we have 10 mouths to feed and clothe which is no joke. What we earn is only enough for food. (Multicrop woman worker)

I was born right here. I've already taken off twice to try and find a good life. Once we went to Serra das Esmeraldas in Irecê. We went to harvest beans. Another time we went to Serra Talhada, to work in irrigation. Here I've already worked for Cica, Agrovale, and Algodão do Nordeste. I don't want to leave again. (Multicrop woman worker)

I came here without an address. I scurried to this place because I was afraid of falling into desperate need and some friends said Bahia is great. My husband wanted to go to Pará but I decided to come here 'cause it is nearer the family. No, I don't want to leave this place again. I don't want to give up my household possessions that I have sweated blood for. (Woman sugarcane worker)

I'm from Buique. I came here [Ibirim] 5 years ago. My children came ahead of us. Then I came with my husband. I like it here. I've no wish to leave here. My husband wants to go back to our bit of land in Buique, but I'm now old and I want to die here. (Woman tomato worker)

Migration as a practice adverse to the worker's wishes is seen as an imposition of the economic system. Nevertheless, although it shows itself to be a practice undesirable for workers, migration can sometimes make it possible, if the family is able to settle down, to send children to school and for other members of the family to find employment.

In the dry lands, migration gathered pace in the 1970s and at the beginning of the 1980s. It is a migration that is mainly regional, but the origins are rural. Although 53% of the surveyed population came from other regions, 80% no longer consider themselves migrants as they have lived in the area more than 10 years.

Migration has its origin in economic modernization. Economic modernization involves an exodus of manual workers expelled by the mechanization of the agricultural sector. Unlike weather catastrophes, which temporarily expel people, mechanization eradicates the worker and his family from the land.

When the family finds itself at this stage, migration becomes a necessity because without an income from agricultural production, the only alternative remains to sell the labour force of all its members to meet consumption needs. This unqualified labour force is more easily sold in agricultural areas where rural enterprises are likely to be set up and in cities. The migratory process of this kind of family is repeated every time that its members become unemployed:

I've lived in 9 municipalities of the State. But after I got here I stopped because there's always work. It's great here! (Multicrop woman worker)

I came here with my family. First my brothers and sisters came, then my husband and last of all me. I liked going to a place where there was water and a good flow of money. I've heard that São Paulo is a good place. What I'd really like is to work in São Paulo as a laundry woman or domestic servant. (Woman tomato worker)

Anyone who doesn't have land lives in the same way no matter where you are. You only need to have a job to have enough to eat. (Woman tomato worker)

We had already left Juazeiro do Norte to go to Fortaleza and from there came here. I came with my father who arranged a job in the Dam at Sobradinho. I left my birthplace 12 years ago. I've been living in this irrigation area for 9 years. I've trundled all over the place since I was 11. (Woman sugarcane worker)

Families in the search of employment create "favelas" (poor shantytown areas) in the towns they pass through. Despite the worry of those power holders about the aesthetic appearance and invasion of their towns, migration is an advance with the process of capitalist expansion as it leads toward a unification of urban and rural labour markets.

Paths Followed by the New Family

The family changes that have occurred in the irrigation areas are similar to changes that have taken place in rural societies considered as the most advanced. Such transformations display similar features because they have been sponsored by capital that organizes its strategies taking advantage of existing institutions. In the "new family" all members of working age are available for social production.

To reach this objective, capital disorganizes family production, generalizes the social and sexual division of labour, and establishes a division between domestic labour and social production (Artous 1982). In this way, capital takes over the means of production that interests it, exercises sovereignty over the labour force, and is thus able to use it in the way that suits it best. In the case of the irrigation areas under study, this economic system by calling on various members of the "new family" to remunerated work, manages to lower salaries and maintains the same level of expenditure, thus indirectly increasing the profit margin of urban entrepreneurs.

The "new family", which has a family income totally in cash (unlike the income in goods under traditional peasant family production), is seduced by capital that, through mass media, introduces it to consumption and use of industrial products. This advertising gradually changes the cultural habits of the "new family" when it substitutes ground maize couscous with bread, biscuits made from wheat flour or rice with spaghetti, the battery radio with televisions, cooking over wood fire with gas cookers, clay pots and pans with the aluminum kind, etc.

It is important to emphasize that industrial products also penetrate remote rural areas including the dry lands, although on a smaller scale and in a different way. These products reach this population once a week on the day of the municipal market, in small quantities because demand is limited as the income of these workers is rarely sufficient to cover food expenses.

Nevertheless, they make a constant effort to substitute cooking over wood with a gas cooker, the possession of which represents a higher social status. It is also observed that in some families when women own a gas cooker they keep it covered with embroidered cloths and on top they place jars with artificial flowers or small objects important to them. Due to the high cost of maintenance the gas cookers only substitute the wood fire on occasions when time to prepare food is limited. Thus, this population even when living in financial difficulties has not resisted being seduced by the consumption of industrial products.

Commercial capital, however, has found ways of increasing its profits in this area by the initiative of buying from producers the "surplus" of maize, rice, coffee, etc., and to transform,

process, label them with factory labels, and easily resell them. These industrial products, when acquired by the rural family, make the domestic chores easier for they free the "housewife" from activities like toasting coffee, threshing rice, and preparing maize for couscous.

This is probably fortuitous for the objective is not to "save" women time from domestic activities but to expand consumption. To make society dynamic and demanding, capitalism ignores everything including the patriarchal doctrine that for centuries restricted women's lives to the private world. Capitalism takes on the patriarchal system when it introduces women to social production, and separates family from production and political relationships.

Because of to these changes, women have, little by little, been establishing themselves as wage earners and compete for places even in sectors regarded as men's preserve like metallurgy, electric energy, the chemical industries, and civil construction, which has considerably enlarged the number of vacancies open to women (Pena 1981; Albuquerque and Rufino 1984; Bruschini 1985).

Women's participation in the labour market tends to produce contradictory effects on patriarchal doctrine. In the irrigated area of the Northeast, the working woman, including those on low incomes, are starting to play a bigger role in household decisions.

This process begins with her pay cheque. This woman not only decides what to cook but also what to buy for cooking. She can also reserve for herself the right to choose the clothes, shoes, and toilet water and make-up that she wants to wear. As far as possible, she can pay for her children's education and buy objects for personal use and for the family.

This clears the way to a more egalitarian relationship among mother, father, and child. Children brought up in this atmosphere when building their own lives may tend to have a closer relationship with their parents. This process may well create the habit of negotiating decisions in the family where all members end up taking part. Thus the man in sharing decisions with other members of the family has his authority reduced (Goldani 1991).

These internal advances, along with the taking up of wage-earning jobs, have been leading women to embark on political and social activities. This has been conducive to the woman reflecting on her position as a worker, mother, wife, housewife, and citizen guided by local groups, the Catholic Church, unions, rural worker centres of education, feminist groups, and even other organizations of an official character like agricultural cooperatives and groups formed by the Technical Assistance and Rural Extension Enterprise (EMATER). The work of these organizations is of great value for the family because without them women would rarely link up with other workers in the struggle for the recognition of their civil rights and would never dream of asking the relevant authorities for nurseries, education, better job conditions, health services, etc.

Capitalist expansion in the countryside, via irrigation and promotion of wage-earning jobs for women, has contributed to making the family more democratic and aware of its rights. Capital expansion breaks cultural habits that favour the family and the organization of workers so that

they may fight to have their rights respected. Nevertheless, some families bound to cultural habits have still not learned to adapt to social changes because they have not understood that they belong to a "new family," created by an incipient economic and political modernization that brings with it the transformation of social life.

This political and economic modernization loosens the most firmly rooted cultural values that kept individual traditional behaviour in place for centuries. Among these values, those of the patriarchal family give way to pressures and undergo important transformations as, for example, in the case of the forms of conjugal unions (Prado 1985).

In the northeastern rural family, the knocking down of cultural values has been taking place especially from the 1970s with the introduction of capitalism into agriculture and the emergence of a new profile in interpersonal and family labour relationships (Goldani 1991). Wage-earning women workers divide themselves between competing in the labour market and fulfilling their domestic tasks.

The state has redefined the term family by broadening its meaning and legalizing divorce. The prenuptial process has been enriched with new alternatives, as friendship with more diverse social groups has increased the options for choice of partner; women tend to get married later; society has come to accept the single mother with more openness. Children born from informal relationships have come to enjoy the rights of legitimate children. Couples have taken on the experience of conceiving children before getting married. The selection of a husband happens in a more independent way for the principal criterion in selection is affection. The official determination of a woman to be a virgin bride has tended to break down, etc.

These cultural changes have not been wholly absorbed by the studied population for, according to some women interviewed, the loss of male family support even if this does not represent a financial basis exposes the family to the disrespect of society. This shows that these women maintain vestiges of inferiority in the family. This type of behaviour also reflects the lack of awareness of the woman worker as to her real role in society. In reality, the system is interested in the rupture of the relationship between production and family ties because this makes it possible to use the necessary labour force as it sees fit for reproduction of capital.

Like other types of economic modernization, irrigation projects produce social effects on the family especially in relation to housing, education, cultural habits, reproduction, income, consumption, domestic hierarchy, forms of work, marriage life, etc. These changes strike hard at the traditional family, which tends to decline with the introduction of mechanization into the countryside.

Such changes include: family arrangements where husband and wife share domestic and work responsibilities; trial marriage in which there is cohabitation for some time and a family is only formally constituted after the birth of children; free union (common law) marriage in which neither party legalizes their union with a civil or church wedding, even when there are children; the family constituted by a person with children resulting from dissolved marriages; and, the so-

called independent production, where the objective of the woman is to have and bring up a child on her own. Besides these family arrangements, perhaps in the long term the adoption of types of homosexual union with adopted children or from previous unions will not be regarded as a scandal, as is already being observed in urban areas.

As the number of "new families" grows, patriarchal traces tend to become obsolete and the traditional family loses its basis of vitality, which is accentuated by the state's recognition of the need for change in family structure and the revision of legislation to offer alternatives in which the man remains as head of the family but the base of his authority has been eroded (Gomes 1991). Thus, the social transformations have established themselves with the advent of capitalism, which has undermined the basis of the patriarchal system and, in its place, has created a more democratic family with a smaller hierarchical division between its members.

Final Reflections

Since the 1970s, the Northeast rural family has been undergoing significant changes. These changes have been promoted by irrigation that transforms production relations in the countryside and redefines the profile of the rural family. To evaluate this redefinition, the variables of gender, marital status, education, activity sector, family income, family consumption, social mobility, reproduction, and housing were considered.

The data show that the transformation has been taking place in a nonsynchronized way. On the one hand, generation of employment, increase in family income, expansion of education, control of demographic growth, and change of some cultural habits are moving in the direction of progress with the support by authorities that fund the rural development programs. On the other hand, housing, transportation, social security, and health services, although marked by the process of economic modernization are seen to have deteriorated.

The negative effects provoked by the technical modernization of agriculture in the family in the irrigation area can be reverted through joint action of local landowners, the state, social movements, and funding agencies of development projects. Together they can implement policies with aims ranging from improving the necessary welfare for families of rural wage earners to the preservation of the environment. The deficiencies detected in the families of the irrigation area require urgent attention as they may cause disturbances of incalculable social dimensions and costs, and so compromise current and future generations. To face this challenge the following suggestions are made:

- Rural landowners should set up, in the grounds of enterprises, schools for the children of workers having the state pay the teachers. The future educated worker will display greater creativity and have more skills to contribute toward greater productivity.

- Rural enterprises should establish agreements with agricultural schools to receive trainees. In the choice of trainees, rural workers' children must have priority to make their continued presence in the countryside possible. The government should assume the remuneration of these trainees. The landowner would benefit from the trainees' labour force. The trainee would have the advantage of putting into practice the knowledge gained in technical schools and may well be contracted by the enterprise that made training possible. The state would be indirectly responsible for the generation of jobs and would be at the same time contributing to the formation of agricultural technicians.
- Two annual registrations should be adopted in rural schools. Such a measure would benefit the children of migrants and children who suspend school activities to participate in agricultural harvests.
- The state should include in the curriculum of rural schools contents related to topics such as soil, forests, fertilizers, water, agrochemicals, and the environment. Similarly, teachers should be trained to transmit knowledge on these topics. The adoption of such a measure will certainly contribute to making ecological management possible.
- Offices of the state's housing program for low-income earners should be set up in the grounds of rural enterprises so that rural workers may apply for the acquisition of subsidized houses. In addition, these offices may well be useful to those workers who are already participating in the program as they may facilitate the payment of monthly amortization of mortgages. This measure may well allow workers to attend work when they need to make those payments.
- Agricultural enterprises should make a contribution to see that the children of their workers do not become "street children" and future social problems. For this they may adopt a program to recruit children between the ages of 8 and 17, on the basis of 4 hours of agricultural work and 4 hours of schooling, including token remuneration subsidized by the state. A program of this nature may well contribute to increasing public safety. This kind of measure is particularly necessary and urgent for the dry lands areas of the Northeast because of the ever-present consumption and trafficking of marijuana.
- The funding authorities of rural development programs of the irrigation area should include infrastructure services in the municipalities and neighbouring towns

included in these programs, with the aim of creating and extending the services indispensable for the population. In this way the formation of environments suitable for the proliferation of diseases and promiscuity in impoverished homes will be avoided. The participation of representatives of civil society, like the leaders of social movements, should also be included in the planning of rural development programs.

- The state and private initiative should stimulate community housing projects in the rural setting. In these projects, the workers would contribute with their labour, the government would grant the land and the necessary infrastructure, and the business sector would, along with financial institutions, guarantee loans at reduced interest rates so that workers may acquire the material for housing constructions. The loan payments would be deducted from monthly wages. The adoption of this initiative could be advertised through mass media including the naming of enterprises who took part in the program.
- An unemployment payment should be created for the rural worker who has a signed labour card.
- Nurseries should be set up in the grounds of agricultural enterprises. These nurseries would be maintained by public officials, whereas the enterprises would assume the expenses for the children's food and the maintenance of the premises. The enterprise, the state, and women's groups in the area would administer these nurseries. In the case of colonization projects, each group of 30 small-scale entrepreneurs could organize a nursery as set out in the foregoing.

Chapter 3

Rural Women Workers and the Grassroots Movements

Institutional Support to Women

The various forms of discrimination accomplished by the family and the state, which afflict women, are inspired under patriarchal patterns. These traditional forms of discrimination, which went beyond denying women the vote and their entry into higher education, occur today, for example, in the pseudo programs of agrarian reform, where women almost never manage to get a patch of land to work on.

At the moment, women's participation in the redistribution of land is not officially prohibited, but it is not made explicit in the norms that govern the selection process. Such a procedure favours the patriarchal habit that, by admitting male supremacy, confers on men the privilege of owning land. In addition, women are underestimated in the selection process for obtaining land when their work strength is given less weight than that of a man (Albuquerque and Rufino 1990).

These and other forms of unconstitutional discrimination are a widespread practice in society. At the same time, certain feminist groups join forces in a battle to guarantee women's rights.

As the relative success of this struggle depends on democratic circumstances, the period from 1985 to 1988 (the New Republic) was a golden age for grassroots movements and, particularly, for the feminists. At this stage, feminists claimed positions of responsibility within the state with the aim of combating official discrimination practiced against women. Browbeaten by these movements, the government authorized the creation of women's support organizations in all of its ministries.

These women's support bases were the fruits of conquests, transformed into governmental decrees published in the years 1986 and 1987. One of the most important female representations is the National Council for the Rights of Women, created by the Ministry of Justice. This Council, given a high standing by the government in the political, social, and economic plan, had as its objective the elimination of discrimination against women in governmental policies. The Council played its role, alongside women's support committees, in the ministries of health, education, labour and culture, agriculture, and agrarian reform and development, disseminating

social transformations and becoming the key link between the feminist and women's movements⁴ and the official and private institutions. This is why one of the most significant periods in the activities of the Women's Council culminated with the reformulation of the Constitution in 1988.

The initial intention was to list and detail the objectives of every women's support network existing in the ministries. It was not possible, however, to carry out this work because almost all these groups were extinct and their records were in dead archives.

Fortunately, as far as the agricultural sector was concerned, it was possible to examine documents about women's support belonging to the ministries of agriculture and agrarian reform and development.

The creation of the Rural Women's Support Committee at the Ministry of Agriculture was based on the following arguments: The Brazilian per capita food production is low, and the rural women play an important role in the production of basic foods; the rural woman worker has an important numerical representation; rural women belong to the category of small-scale producers; women participate actively in the processing and commercialization of agricultural products; and, more than 40% of the labour force of small scale production is female.

Considering the importance of the woman worker and the lack of attention paid to this enormous contingent of the population, the committee was created as a centre for research on and support to rural women, especially for those on low incomes, to identify the various profiles of the rural woman worker, her role in the production and reproduction of the family labour force, and her problems and needs to give orientation to the state programs

The objectives of this committee were to seek out the existing literature and studies on women; to contact research institutions to obtain their collaboration; to contact international institutions interested in funding studies or projects about rural women; to establish links with institutions that carry out activities with rural women; to visit the various regions where rural women perform a relevant role; to interview and visit rural families and NGOs of women; to dialogue with the Brazilian Company of Food Products regarding the role women workers have in the supply and commercialization of agricultural products; to dialogue with the Cattle-breeding Products Business (EMBRAPA); and to formulate agricultural policies directed at rural women.

The creation of the Rural Women's Support Committee at the Ministry of Agrarian Reform and Development was justified by several arguments: Women currently occupy an important position in rural production, where they perform a fundamental role in small-scale production; the participation of women in the contingent of wage-earning rural workers has grown significantly in recent years; agrarian reform by providing modifications in the forms of ownership, use of land and labour relations has to guarantee the participation of rural women;

⁴Feminist movements defend changes and transformation, whereas women's movements demand that acquired rights be put into effect.

and, the role of the woman rural worker is fundamental as she is an indispensable element in agricultural production.⁵

This committee aimed to define policies and to develop plans for providing rural women workers with better working conditions and opportunities to make it possible for them to participate in the process of agrarian reform. The committee's mandate was to define policies and coordinate plans of action, to contact leaders of rural women workers movements to get acquainted with their demands and necessities, to establish priorities for each region, and to carry out its activities in conjunction with other public or private agencies having rural women workers as the beneficiaries of their programs.

In addition to the ministries, the state and municipal authorities also supported women. Thus, in the period 1986–1990 when political circumstances looked favourable for grassroots movements, practically all states and municipalities created women's organizations (federations, councils, etc.). At the level of the states, the work of the Women's Council advanced according to the democratic circumstances, whereas in the municipalities some councils lost sight of their objectives, mainly due to their small area of action, which made them vulnerable to the intervention of politicians.

The state also supported women through the maintenance of women's federations in almost all state capitals. These federations had as their objective the elimination of acts of discrimination and prejudice against women, at school and at work. Such federations had the support of the national Confederation of Women in Brazil. Theoretically, women's federations fought for a more humane and fraternal society but some of them lost sight of their real objectives, mainly because of economic and political interests. They went on at times to develop corporative activities.

Moreover, the cause of women could count on the support of professionals in universities and research foundations that proposed studies on women's problems. These professionals also contribute through participation in seminars, organization of courses, and the provision of advisory services.

The support of the state to women permitted women's leaders to promote advances following the example of the rights obtained in the last revision of the Constitution. At that political moment, women managed to see a significant number of their proposals approved: free education up to the 8th grade; the maintenance of nursing for children up to the age of 6; a

⁵"No matter what their legal marital status may be, whether they are married, living with a man or single heads of their families, women must be considered with more attention in the plans of Agrarian Reform and resettlement. Because the title to the property distributed during the course of Agrarian Reform is nominally conceded to the couple, irrespective of their legal marital status, the full use of the land by the family will be guaranteed, and so preventing sale or transfer by unilateral will" (Document of the Pro-Rights of Rural Women Committee, sent to Nelson Ribeiro, Minister of Agrarian Reform and Development).

retirement pension for rural women workers at the age of 55; land titles conferred on men, women, or both irrespective of their marital status; the protection of maternity; 4 months' paid leave at the time of giving birth; the guarantee of their jobs to women during pregnancy and maternity leave; etc. It is only fair to recognize that this valuable and opportune involvement by the state in the defence of women's rights is a consequence of the determined struggle of fully committed feminists who dedicated themselves to this cause.

Sectors of the government committed to specific and general women's causes, as well as other social movements, have continued to receive the increasing support of the general public, above all during the economic, social, and cultural crisis that has been affecting the country for more than a decade. This support can be observed in the integration of new members into existing movements and the formation of new women's groups.

These movements are mainly represented by nonprofit feminist NGOs and women's organizations, women's forums, documentation centres on women's problems, women's union departments, and national/international networks. All of them maintain a dialogue with national movements through meetings, publications, training courses, financial assistance, etc.

These women's and feminists' movements generally carry out comprehensive studies on diverse aspects of the women's issues. Some movements target their activities on topics such as violence, health, abortion, family planning, reproduction, public education, and politics.

The women's movements referred to generally take advantage of politically favourable moments to launch claims for the benefit of women. These moments, also favourable to grassroots movements in general, depend on the democratic climate controlled by the government. Thus, when there were signals of a democratic retraction, as happened in 1989, women's conquests suffered a setback.

In 1985, at the end of the military regime, the government of the New Republic proposed to reestablish civil government to implement social policies and even to maintain links with the grassroots movements. In view of this position, movements working on behalf of women took advantage of this opportunity to obtain full citizenship and better living conditions. At the time, there were undoubtedly some gains. Practically all the commitments taken on between government and women's social movements, however, began to fall apart when José Sarney, then the substitute for the President of the New Republic (who died before taking up his mandate), set out to rearrange the ministerial ranks committed to social causes.

The conquests on behalf of women fell away and reached their lowest point from 1990 on when Fernando Collor de Mello assumed power. He ignored women's struggles and dismantled their bases that had, by then, been set up at the federal level. In this sense, the first target hit was the National Council for the Rights of Women, which was practically totally bereft of economic, political, and even moral support.

This process was continued and other bodies with a similar function were summarily snuffed out under the excuse of reducing public sector costs. This occurred with the Committees for Women's Support at the Ministries of Agriculture and Agrarian Reform and Development. In

summary, the damage to women provoked by this process of dismantling the public sector has been incalculable. At the moment, practically all women's support organizations set up in federal ministries have been deactivated. The negative consequences of all this struck directly at the grassroots movements, which have lost the link between government and society.

This has led grassroots movements, including feminist movements, to concentrate their battleground strategies on the most progressive federal states. In addition, to avoid scattering the struggle on behalf of women to the four winds, feminist movements invested in the foundation at the federal level of an Advisory Association on the Feminine Condition whose function is to outline common lines of work for the state councils. The dismantling operation by the federal government has led women's NGOs to lobbying in parliament to defend projects that legitimate women's rights.

In the current circumstances, the adoption of a tactic such as this is so common in the National Congress that some members of Congress are regarded by the population as defenders, representatives, and even specialists in certain women's subjects such as abortion, family planning, and violence against women. Several of these politicians sometimes become members of feminist movements and, as such, attend meetings, vote in assemblies, and discuss subjects, especially those for which they feel most responsible.

These members of Congress and supporters of the women's movements introduce draft bills on behalf of women, act as leaders in congress, and mobilize the media with the aim of raising the awareness and obtaining the support of the population at large. This is more often adopted at the federal level as a result of the sexual inequality prevailing in the country. At the same time, it is important to highlight the performance of state and municipal councilors who help women.

In an assessment of the current situation, it must be observed that the position of the Executive indicates a change in attitude to the condition of women. In this sense, the substitution of the president after the deposition of Collor de Mello was accompanied by the reopening of the National Council for Women's Rights. It is possible that this Council will influence the creation of organizations for the benefit of women in the area of federal administration.

Even after obtaining state support, however, it seems necessary to include private initiative in the feminist proposal. Private enterprise is the greatest generator of jobs and, consequently, responsible for a vast amount of discrimination against women.

Considering capital and labour as complementary forces, it is a mature and productive attitude to allow the permanent participation of the private sector in women's events, for example in debates about women's working conditions and the quality of life in families.

Unions and the Women's Movement

In Brazil, discussion about the relationship between capital and labour is still at an early stage. Businesses refuse to open their account books and do everything possible to avoid the effective participation of workers in control of shares (Simonsen 1991). The inauguration of a new age in capital-labour relations in Brazil requires drastic changes in some structural aspects of society and in economic and political plans. The growth and modernization of institutions, entrepreneurs, and the working class demand mechanisms that ensure the most harmonious union possible between the different sectors. A cultural modification of this order must be accompanied by greater flexibility on all sides so that profits, participation, and even comanagement can exist (Luiz 1991).

To accomplish this, unions must become more representative and exercise their responsibilities with greater rigour by deepening their roots among the workers whom they represent. Entrepreneurs must also become aware that they need to modernize their relations with workers for, if businesses are prepared for economic growth, they must also be prepared to pay better wages (Pazzianotto 1991).

The relationship of capital to labour has as its intermediaries unions and representatives of management. Thus one of the main challenges for unions is to organize the various types of workers because the country is heterogeneous and unequal from the point of view of capital and labour. Such inequality deactivates class organizations and so takes part in keeping unions weak and, very often, undemanding.

In the 1960s and early 1970s, unions, which barely represented the working class, proliferated during when the country was under a military government. During these years, the unions, many of which had a self-serving and paternalistic structure, administered medical and legal assistance (some still do) and so defended the workers from employers and their excesses (Azevedo 1991). Although such a structure has not disappeared, the transformation process of unionism is an incontestable reality at the moment.

This process, which has been increasingly prominent since 1978, was reenforced by the 1988 Constitution. It guaranteed the obligatory participation of unions in collective bargaining, the contributions determined by the unions' assemblies (a virtual nursery for strikes), legal substitution with powers to take businesses to court without the authorization of their representatives, job stability for substitutes of union representatives, and the creation of unions without state authorization and with the guarantee of the right to strike, which permits the paralyzation of services for justifiable reasons and the right to arbitration in free collective bargaining.

Despite the constitutional advances, the process of restructuring unions has only affected unions linked to sectors that have a large number of politically aware wage earners. In these sectors, the unions practice, in some cases, free collective bargaining and make gains on the basis

of productivity increases. This procedure, which is the norm adopted by unions in developed countries, is uncommon in most Brazilian unions, particularly in the rural areas.

Brazilian rural unions had their historical basis guided by anarchist/marxist philosophy. After the 1950s, these unions redefined their politics due to the pressure of two strong grassroots movements that, in view of the eradication of land workers, ran up two battles. One, led by an urban trade union leader, fought for an agrarian reform project with the immediate division of lands, and the others, supported by representatives of the Catholic Church, demanded the unification of labour rights in the rural and urban sectors.

Because of the social explosion provoked by these two movements, the state, aiming to put the brakes on agrarian reform, lent its support to the movement and defended labour rights through the institutionalization of unions, the Statute of the Rural Worker, the National Confederation of Workers, and a Land Statute that mainly covered agrarian reform and agricultural development.

The military intervention in 1964, however, put the brakes on grassroots movements and particularly on the struggle of rural unions. Yet, this struggle was resumed in different ways, even during the military dictatorship, through the implementation of the policy for agricultural development, which uprooted a massive number of land workers.

At that time, unions with different aims were created. On the one hand, local politicians tried to contain the workers' struggle by encouraging the creation of unions on a paternalistic/self-serving basis. On the other hand, the Confederation of Rural Workers tried to widen the number of unions by claiming the implementation of the rights acquired. In the end, a combative union current emerged supported by segments of the Catholic Church, which called into question union politics. Thus in the 1960s and beginning of the 1970s, rural unions saw their number increase by 85%.

After the 1980s, various rural unions realigned their struggle in defence of workers who owned land, had tied-cottages, or were tenants. These workers, mainly in the Northeast, were resisting the expansion of cattle pasture and some mechanized crop growing that were invading the areas where they lived.

The policy of agricultural development awoke a redefinition in union politics that focused on the cause of wage earners. It is well known that this is a difficult task, because workers frequently move from place to place and each union has a fixed geographical area. The rural union is complex for it represents workers belonging to different categories and having different ideologies. The great majority of rural unions have an archaic structure. Many of them do not even carry out a defense of wages.

The timidity of rural union organization and the inequalities of union strength explain the failure of recognizably advanced policies. For example, free collective bargaining could have a perverse effect on the worker if implemented in its purest form, as it could debase the remuneration of the great mass of workers without a minimum wage laid down by law. The implementation of a measure of this nature in a country that possesses a large number of

unemployed would benefit wage earners belonging to strong unions, whereas weak unions would depend on the good will of the employer.

The fragility of the rural union is also due to its links with different classes of workers. These include the small-scale landowner, the tied-cottage farmer, the tenant farmer, the "parceiro," the hired labourer, and even the cowboy. Bearing in mind the interests of each of these categories, it is possible that the rural union will come up against the situation in which two of its members may be in judicial confrontation. The union struggle, therefore, can hardly be unified among rural workers.

In the rural Northeast, where there is a low rate of wage earners, unions are, in general, limited to programs whose line of work is based on paternalism and finding work for members. The great majority of workers meekly accept the policies practiced by these unions. Such behaviour is mainly common among women. The participation of women in grassroots movements is generally small and, supposedly, is justified by the tradition that demanding rights and making politics is what men have to do (Leite 1984). This participation, however, has been increasing in keeping with families suffering social, economic, and political threats as well as on account of the social transformations arising from women's socialization.

The social movements most attended by women are workers' unions and informal women's groups. As to the unions, 19% and 31% of the women workers in irrigation and the dry lands, respectively, are unionized. Most of these women joined the union with the aim of getting medical assistance (78% of the irrigation women and 83% of women in the dry lands). The data suggest that women withdraw from the union to the extent that they get medical assistance in their jobs:

The union is useful for helping out when there is illness, but here the union is no good.
(Dry lands woman worker)

I'm a union member. The union is good for getting medical assistance, a doctor, medicine, an operation. In our house, the two of us pay union dues because we didn't have a civil wedding. (Dry lands woman worker)

I'm not unionized. I've only got FUNRURAL [Rural Development Fund]. (Woman rice worker)

I was a union member. The union is good for supporting you when you're ill and for giving you a pension. (Woman rice worker)

I was a union member. I was paralyzed for 3 years and the union didn't help. So I stopped paying. I think the union is good for nothing. (Woman rice worker)

I'm not a member of a union because I can't be. I pay the social security. The union's good for giving medical assistance. (Woman rice worker)

Round here few women have joined the union. The union is good for medical assistance and asking the boss questions. (Woman rice worker)

Although the great majority of women workers have joined the union to have the right to medical assistance, various rural women workers tend to ask their union about activities related to labour claims. Thus, according to the survey 12% of the irrigation women joined a union with the aim of struggling for labour rights. This figure, although relatively low, stands out when compared to the 3% response of the dry lands women. Thus, despite being slow and restricted, the women's struggle is advancing because the rural woman worker is becoming aware of her rights. For the union, the more it assumes a combative position, the greater the number of women workers it attracts who will look to it for more than health assistance (Muller 1985). Because of their participation, they will certainly strengthen the political struggle, the defense of rights, and the mobilization of workers.

Union leaders should be aware of their duties and political role. Leaders should be capable of awakening the interest of workers of both sexes in participating in the union as the political awareness of working women is of fundamental importance to the union. Unfortunately, unions and workers seem far from such a level of maturity, especially in the rural area. In this respect, the rural women workers take part in a restricted way in the union because they are not interested in the union's work (46% of the irrigation women interviewed and 48% of the dry lands women).

This lack of interest is probably motivated by their low level of awareness, the perception of the union as a man's place, the family domestic duties, and their husbands' opposition. The faulty performance of the unions and the inadequate tactics adopted by them to attract members can be added to these reasons. Unions almost always expect that workers will come looking for their services and do not go out to offer them to the workers.

There is possibly a latent demand for unionization. Thus, in the irrigation area 25% of women say they do not become members due to the lack of opportunity to do so as well as the fact of not knowing how to enroll. The same may be true in the dry lands where 20% of the women workers say they wish to become members of a union.

Women's participation in a union, however, is discouraged by the information provided by male chauvinist union leaders that the unionization of men automatically extends to the family. In view of such information, women avoid joining unions because of their low level of political maturity. If they participate in a union, they later cancel their membership because they consider it unnecessary. This misinformation has influenced women workers, for 16% of the irrigation women and 26% of the dry lands women stated that they were not unionized because their husbands were already members.

In fact, union legislation foresees the extension of benefits to the spouse and young children except for the right to vote in union elections. Union activists, however, inform the women workers of a half truth when they omit to mention that the union is a forum for claims and the labour struggle, and that all workers should participate in the union movement. Some union officials advise women not to become members, whereas others veto women's participation. Such a fact was denounced by the women interviewed and confirmed by unions in the area.

In the interviews, union presidents stated "Women are prohibited from becoming members of the union because the law does not permit it." In fact, this behaviour is not unique to the studied area for a similar situation was observed in the sugarcane area on the coast of Paraíba (Albuquerque and Rufino 1990). In that region, women stated "Despite this right not being denied by law, as union officials sustain, women are not encouraged to participate in their union." The behaviour of these union officials damages women just as much as it does the union because its struggle is weakened.

Men's positions are reflected in the composition of the union's management. Traditionally, the union generally maintains management under the command of men where women rarely take on a decisive role. Those who share in this movement suffer from acts of discrimination, in the union environment, in the family, and even where they live (Leite 1984).

In the studied area, women are not always prepared to carry out union work. This makes their participation in the management of the union difficult. Those who perform some management function carry out auxiliary and complementary tasks. This situation is common in the agricultural area for 4% of dry lands women workers work in the union, carrying out tasks in the office, whereas only 1% do so in the irrigation area. It is important to note that in the unions of the dry lands, which theoretically have a more traditional structure, women participate relatively more, probably due to tasks they perform like typing. This activity is performed by men in the irrigation area.

Despite the restrictions, it is worth underlining that giving women a place in management of a union is an old project of unions. This is why the creation of women's departments was programed, including tailoring, sewing, and cooking to attract women workers. This project, however, apparently did not work as it did not represent a consensus in the union environment. Some activists claimed that the women's struggle might weaken the workers' struggle.

Nevertheless, with or without consensus, the women's struggle advances and tends to penetrate the unions for it arises from the growing participation of women in the labour market. Thus, the creation of women's departments in unions is now a concrete and undelayable necessity. Women workers need to raise their level of awareness about their citizens' rights as well as to encourage their participation in the general struggle. Women's participation in union management, in addition to responding to an immediate and real need, would also respond to an expressed wish:

Women's problems never reach the union. The law says that we have the right, but we don't know how to take this forward [petition for change]. Many things are guaranteed on paper, but [in practice] never happen. If there were a woman inside the union, things would be easier. (Woman sugarcane worker)

I'm a union member. The union doesn't do anything for women. They say that if you've got a land problem, the union has a lawyer. The union also helps you to get official documents. If women were something big in the union, perhaps they would help us. (Woman tomato worker)

To my ideal way of thinking, if a woman was president of the union, that would be better for us because women are not ashamed to talk with other women. (Woman tomato worker)

If a woman were president of the union she would be better than a man. Women understand women's problems. A man only understands when he sees what's in it for him. (Woman multicrop worker)

Some unions recognize the need for women's departments in the union environment. Union leaders admit that modern agricultural enterprises employ more women than men and, on account of this, consider that the union needs women's departments. This recognition concerns the union presidents who know that women leaders are scarce. Besides discriminating against women in union management, conservative union leaders upset the union movement when in their eagerness to keep themselves in power for an unlimited period maintain members alienated and dependent. The following sentences are indicative of this situation: "Making the member more aware is dangerous" or "Making the worker more aware is not important. Awareness is not education."

In the studied area, the majority of union officials, out of ignorance or malice, confuse the true meaning of the union. Instead of encouraging the struggle for change, these officials establish medical assistance as the union priority. Moreover, the unions almost always advise the worker to avoid confrontation with the employer in court by arguing that justice is very slow.

Nevertheless, some union leaders who are apparently combative, despite recognizing the slowness of the labour courts, classify it as the most representative instrument of the worker in labour leaders's negotiations. In the opinion of these union leaders, "the labour court is the only body respected by the landowner. When the landowner sees that the worker has prepared his documentation and that he will be taken to court, he quickly makes a settlement [decides to pay the worker's rights]."

Informal women's groups have been founded and set up by members of the Catholic Church. The Church in defence "of those who suffer pressure and pain" organizes activities alongside the low-income groups, thus providing the opportunity for the formation of women's groups (Chiac and Padilha 1982). Nevertheless, when these groups are formed they are almost

never oriented by directives addressed to supporting their class, or raising consciousness about the existing social inequalities. To the extent that these movements are structured, however, discussions flourish on specific problems that tend to lead the women's community to awaken their class consciousness and the importance of their political participation.

As women leaders familiarize themselves with politics, they widen participation in the grassroots movements, diversify joint actions, and sometimes create new groups. The participation of women in grassroots movements represents a step in the direction of socialization and consciousness raising. At the same time, this participation is difficult, for women's presence is generally rejected by union leaders. This rejection damages the union that, instead of growing, divides its forces with the women's movement. As a result, the general struggle of workers is sometimes put in second place.

The groups of women in the area studied, although numerically less than that of the unions, exhibited a qualitatively superior participation of women. Women in those groups generally target the discrimination against women. Some have been created by groups of women who are affiliated to unions. Only a small portion of the population knows about the women's movements. In irrigation and the dry lands, 12% and 9% of women, respectively, know about the existence of women's groups. Of the total of irrigation women workers, 36% take part in rural movements, whereas in the dry lands participation is limited to 7%. Women, however, expressed a demand for women's groups and the desire to participate in their activities:

It would be great if there were a place for us to talk over problems. When we're washing clothes, we talk about illnesses. (Woman tomato worker)

Women don't get together to talk about their health problems. I think it's important for such groups to exist. (Woman tomato worker)

I think it would be great if women met to discuss their problems but we don't have this here. (Woman tomato worker)

Women don't get together here. It would be great if we could meet together. (Woman tomato worker)

Women don't come together to talk things over. It would be great if we could meet up. (Woman tomato worker)

There was a widespread knowledge of the existing groups in the tomato growing area. The primary data indicate the nonexistence of women's groups only in the rice-growing region. When semistructured interviews were carried out, however, it was found that a woman's group was in the process of being formed by rural women in the region.

Political organization by women is a difficult task mainly because the family is structured on a patriarchal basis. Moreover, the double working day, their low level of political consciousness, and their precarious financial situation interfere negatively in their organizational capacity. Thus, the woman wage earner in irrigation pointed out as obstacles to her participation in women's groups the shortage of time (62%), the nonexistence of groups in the area, and the lack of credibility in the work group (18%).

In fact, finding time to take part in social movements is a problem for women workers. A large number of them use their free time to continue working in the enterprise. Thus, they only have the night-time to divide between rest, domestic chores, and other duties. In the following statements, women consider the work of women's groups positive. They brush aside their own participation in them, however, because of the shortage of time:

I don't know if there are women's groups because I don't leave my home to go anywhere. I only go back and forth from work to home. It would be great if women could discuss their problems. (Woman sugarcane worker)

A woman's group exists here but I don't take part in it. These groups want the construction of factories for women to work in. I don't take part because I don't have the time. I've already got black marks in the enterprise for days off work 'cause I went to parent-teacher meetings. (Woman multicrop worker)

I've already heard people speak about a women's group here. I don't know what they talk about but I believe it's good. (Woman multicrop worker)

I think it's important that women meet up to discuss their problems. (Woman sugarcane worker)

In the arid areas, women take almost no part in movements due to the limited number of groups existing there. Most of the time, women's groups spring up from social problems that inevitably affect rural families. The discussion of these tend to multiply the participation of those present, and leaders arise from this who, in principle, begin to help in the organization and as often as possible take on the leadership of the groups.

It is worth emphasizing, however, that many groups are led by members who do not belong to the category of rural women workers. This fact is common principally in the irrigation area, where 39% of the women interviewed who were members of groups said that their movements were headed by the Catholic Church. Some 27% of irrigation women, however, take part in groups directed by rural women. In the dry lands, the incipient work of the groups is at the initiative of rural unions and women workers.

The women's movement has normally been formed in an area in which the workers have been eradicated from the land. It appears that the social crises together with workers' demands

strengthen the social movements and favour the creation of others. This has been occurring in the Northeast, especially in the irrigation area where, in the last 5 years, the number of social movements, mainly women's, has practically doubled. In the dry lands area, the creation of women's groups has been occurring very slowly over the last 2 years.

Most women's groups, according to survey data, have guidelines for making claims taking into account women's demands. Obviously, these claims vary from group to group. In the irrigation areas, women claim for better wages (25%), equal salaries between the sexes (14%), and the right to unionization (14%). Women in the dry lands concentrate their claims on land to work on (23%), legal participation on the land (23%), and more participation in the union (15%). The participation of rural women in women's groups, according to the evidence of the survey, is considered as extremely positive as it contributes to the process of socialization and consciousness of women in the countryside.

The Struggle for Labour Rights

Most workers, because of their poor political organization and despite the legislation, do not always have their rights respected. In this context, rural workers have these rights overlooked more than urban workers do.

The legitimate power of workers in the countryside was only legally recognized in 1963 with the creation of the Statute of the Rural Worker. The implementation of the statute guarantees proportional holidays, a proportional 13th month's bonus wage, paid leave and maternity leave among other rights to the rural employee, and the individual registered by a labour card and social security.

Registration of the employee with a labour card and social security, although obligatory for any job, including rural ones even when temporary, is not always carried out by entrepreneurs. The main reason is the financial costs taken on by businesses in relation to labour rights. On signing the labour card, the employer is officially obliged to fulfill his duties and the worker is protected. In practice, however, there are employers who only carry out their obligations toward employees as a last resort in the labour court. Meanwhile, there are many cases of workers who, through ignorance or fear, do not appeal to the judiciary power.

Breach of labour legislation affects all sectors of the economy. Yet, disrespect for the worker is more evident in the primary sector, which can partly be explained by the political disorganization of the rural working population. Of this rural working class, women are the most heavily affected by their inferior position. With the new Constitution, however, and after much struggle, women have managed to legalize the rights that had been denied to them such as family income supplement, maternity leave increased to 120 days, and a child benefit. Despite these conquests, women still need to fight to have their rights respected by employers, principally those of the rural area.

Social security, which has as its objective to protect the worker by means of a pension, life insurance, help in cases of infirmity, and funeral expenses, existed in the rural area through FUNRURAL until the beginning of the Collor administration, which decided on its extinction. The entrepreneur made a contribution to this fund of 2.5% of production.

With the extinction of FUNRURAL, the labour cases of people of the countryside are sent directly to the federal government on forms through the mail. In spite of the deficiencies that FUNRURAL had, its disappearance is regretted because rural workers lost the close contact that they had with representatives of the government when they had to resort to social security for help.

As to the poor performance of FUNRURAL, it functioned in the areas studied almost as a distributor of pension payments. The officials showed they knew little about its role, which indicated that this form of social security did not function well.

Registration of a worker's labour card, which represents the first step toward the recognition of the employee as having rights as a worker, is shown to be lower in the countryside than in the urban area. In 1989, data show that, excluding the North region, only 15.8% of women workers in agriculture had a labour card, whereas the figure for men reached 23.1%.

In the Northeast, this figure falls to 8.7% for women and 14.6% for men. In the irrigation areas, however, 48.7% of women interviewed declared to be on full-time contracts and 93.7% stated that they had their labour cards signed for the first time in their current enterprise. The other women workers interviewed, toiling away in temporary work, do not have their labour situation "regularized" by the enterprise, although labour legislation also extends this right to temporary workers.

All the interviewed women with registered labour cards were employees of the two largest enterprises surveyed and, although "formally recorded," enjoyed very few of the rights guaranteed by labour legislation. Although they have labour cards, not all of them were considered full-time employees. In fact, most of the time, these women were contracted to carry out tasks, and about 60% had been working for less than 7 months in the same enterprise. On concluding the tasks, they are legally made redundant according to what is stated in the work contract but the most productive continue working.

The practice adopted by the entrepreneurs of signing the labour card, including those of temporary workers, can be used as much by them to keep themselves safe from possible penalties under the labour law as to guarantee the continued stay of women in activities that, if interrupted, would produce financial loss to the enterprise.

The rights granted to women by the new constitution, such as maternity leave for 120 days and the permission to breast-feed one's own child until 6 months old for one hour during the working day, are rights that most "permanent" women workers admit they have. Less than 40% of these women, however, enjoy or expect to enjoy these rights in their current job. About 50% of the other women workers interviewed, who toil away in the colonists' small lots doing temporary work, recognize that they have these rights despite not enjoying them.

The greater awareness of labour rights was indicated by women workers in areas where the modernization process is more accelerated. These wage earners work alongside other workers who have their rights respected, and have the opportunity to take part in pro-worker social movements, which are more easily created in localities where wage earning is widely practiced.

Despite the perception presented by the women interviewed with regard to their rights, when they are cheated by employers they are afraid to take them to the Labour Court, as the statements below show:

It is not worthwhile taking the enterprise to the Labour Court, for later on we and our kids will need this work. (Woman sugarcane worker)

Men take the enterprise to court but women are more afraid to do so because they imagine that they will need it later on. (Woman in fruit growing)

I've already worked several times for this enterprise in which I am today. The longest time I've ever worked was for 10 months. Sometimes when I quit I had the right to nothing. The last time they only paid me the FGTS [Guarantee Fund for Time Worked]. I didn't go after my rights because I didn't want to make my name mud in the enterprise because I'll need it later on. (Woman sugarcane worker)

In general, women are afraid to go to the Labour Court to claim the rights denied by their bosses. This is due to their passive acceptance of their historical subordination to the family as a daughter, subordination to their husband as a wife, and subordination to capital in the world of work (Rossini 1988). Despite these difficulties, these women have already advanced in insisting on their rights, for of the complaints made to the Labour Court of the municipality of Juazeiro da Bahia against the two large enterprises studied, in the first half of 1989, 10.5% were undertaken by women.

The most frequent types of complaint undertaken by labour lawyers were payment of the 13th month bonus wage, payment of a month's notice, holidays, overtime, and being fired during maternity leave. Almost all the plaintiffs have worked for less than 8 months in the enterprise that action is taken against and some of them have already been employed more than once in the same enterprise. Of the total of complaints made to the Labour Court in the first half of 1989, 45.6% were by workers cheated by the owners of the enterprises.

According to information obtained from the Union of Rural Workers of the municipality in the studied area, the sugarcane industry displayed the worst behaviour:

This enterprise is worse because it sets out to intimidate workers who bring charges. The enterprise does not allow workers to organize themselves for we have already called various meetings with the workers and the "cats" [employees supervise work teams] have stopped them coming.

According to the same source the enterprise exercised strong pressure on its workers when it wanted to fire them. Under this circumstance the worker felt forced to resign and so his rights were reduced. It seems reasonable to imagine that one of the major reasons for this situation is the social and political disorganization of this category of worker, partly caused by the state of poverty and the shortage of work.

Tools of Social Intervention

To face the problem discussed in the foregoing, there is a need to develop means of effective social intervention. The study experimented with discussion, training, and dissemination mechanisms as explained in the following.

A *seminar* was organized in the initial phase of the study. Its first aim was to improve the possibilities for women and state representatives to carry the proposals suggested by the study forward to the appropriate authorities. In addition, the seminar was taken as an opportunity to publicize women's support programs that at the time existed and yet were unknown to most of the public and to researchers working on the topic. Aside from this, the seminar made it possible for women's rural groups to contact each other, along with state representatives and women's support organizations.

This 2-day seminar was held on the premises of the Joaquim Nabuco Foundation and had included social researchers, women leaders of the Northeast and the South, Congress members of the Brazilian Democratic Movement, and representatives of the National Council of Women's Rights, the Central Union of Workers, the Centre for Education and Culture of the Rural Worker of the State of Paraíba, NGOs of rural women, the Trade Union of Rural Workers, the Ministry of Health, the National Department of Anti-Drought Projects (DNOCS), the Rural Federal University of Pernambuco, the Josué Castro Center, the Superintendency for the Development of the Northeast (SUDENE) and the Federation of Agricultural Workers of the State of Pernambuco. They formed an audience of about 40 people.

After individual introduction of the guests, an explanation of the study was provided in terms of its objectives, aims, target population, geographical area, and instruments used for gathering the primary data. Subsequently, the objectives of the seminar were explained. The meeting continued with presentations about women's support programs. The second session of the seminar was devoted to the presentations of the NGOs, women leaders of the Northeast and South rural areas, and other representatives of women in the countryside.

In the following session, dedicated to the Congress members, there was a presentation about the draft bills in congress created in favour of women included in the new constitution and the concerns about women, particularly rural women. In general, the participants discussed the deficient role of the state regarding women's problems; the mobilization of politicians, NGOs, and

women's informal groups in the carrying forward of proposals for changes to the authorities; and the lack of attention given to these proposals by these authorities.

The next session was given over to an assessment of the meeting by the participants. In the opinion of the majority, the seminar had positive results for the mutual sharing of information that had often been restricted to isolated groups and for the opportunity afforded to rural women workers to participate in research in which they were the principal theme.

Its importance lay in that the objective of the meeting was not to present the final result of a research study but to seek ways of taking forward the proposals raised by the study. According to the women rural workers, representatives of the women's support organizations, and NGOs, seminars of this nature should be held frequently by academics working on women's issues.

The breaks and discussion sessions of the presentations were joyous occasions, thanks to the rural women workers present. There were songs that told of humiliating situations experienced by women as well as the lack of interest displayed by the authorities. Most of the songs performed had been written by the women rural workers themselves. The rural women brought banners and posters denouncing the plight in which the rural working population finds itself, emphasizing the situation of women. These banners and posters had been hung up by the women themselves in the room in which the seminar took place. The coordinators also pinned up in the room various pictures of women from the areas to be researched.

The final session of this meeting culminated in a letter of protest drawn up and signed by the rural women workers and other participants. This letter recorded the serious oppression and the failure to give attention to problems of mothers, workers, or maids in urban or rural areas. It protested, among other matters, that proposals on behalf of women brought to the attention of government are not taken care of.

In the same way, the letter emphasized that politicians had not fulfilled what they had promised, neither when acting as the legislators of the reformulated Constitution of 1988 nor as governors. It also protested about the absence of representatives from the state and of Congress members who, although invited, had not showed up. More than 200 copies of this letter were distributed to the formal and informal women's groups, researchers, politicians, and the government.

In general, those attending the seminar made a positive evaluation of it. The absence of some guests, however, who would have enriched the seminar even more was regretted. This absence of those who worked in the federal sphere in Brasilia, politicians, and representatives of the state, can partly be justified because of political events going on in the country as it was election year. Government entities and politicians present showed themselves committed, as far as possible, to defending and taking action on the proposals to be raised by the study.

Similarly, those representing women's movements passed proposals and pressured them to take action. Changes in government, however, led to the substitution of members in the

Executive. Thus, people who theoretically were committed to changes favouring women lost their influence in the governmental sphere.

During the 2 days, there was total coverage of the seminar by the local media. This coverage was important mainly because it created a demand for research in some state sectors, in the academic sphere, and in social movements sensitive to women's problems.

Another tool of social intervention was a *training course*. Its objective was to provide information about the research results to the rural leaders so that they could disseminate them among the working population and rural social movements. It also represented an attempt to widen the understanding of rural women about the causes and effects of their problems. In acquiring this understanding, women would have the opportunity of strengthening their arguments for an improvement in social welfare. The event called "The Rural Woman's Dilemma" was attended by 30 female rural leaders. The responsibility for leading sessions fell to the coordinators of the study. The planned schedule was for 2, 8-hour days, but it lasted 25 hours.

Guidelines for the course content were based on the study's preliminary results and were targeted on the impact of agricultural modernization on the rural family structure, the monetization of women's work in agriculture, changes in the way of life and work, and the woman rural worker and the grassroots movements.

The technique adopted by the coordinators in the sessions was elicitation and the use of a blackboard. To organize the course, the BENVIRA Group was contracted to provide administrative support. BENVIRA is an NGO with headquarters in the Pernambuco municipality of Afogados da Ingazeira. It conducts educational activities among women in the rural area.

In evaluating the course, a semistructured questionnaire was used that was answered by the rural women workers. The content of the questionnaire concerned the place, materials used, food offered, organization, and agenda discussed. Each aspect was evaluated in terms of quality and relevance.

On the whole, any attempt at assimilating organized information demands a commitment from the interested party. The need for such commitment becomes even greater when the type of task does not form part of the everyday routine of the individual. Nevertheless, the course apparently did not demand excessive effort from the participants for two main reasons — (a) The participants were curious and were satisfied because they had the opportunity of discussing the results of a study originating in their environment, and (b) the subject under discussion was very familiar to their daily reality, which helped the assimilation of the materials presented.

Thus, the content presented in class was generally well received. During each session the participants made interventions by means of questioning or songs that dealt with the oppression of women, as the lyrics, by famous composers below show:

Maria, Maria is the sound, is the colour, is the sweat, is the strongest and slowest dose
of a people which laughs, when it should cry and does not live, only suffers life. But we

must learn the tricks, we must be light, and we must have a dream. If your skin bears this mark, you possess the idiosyncrasy of having faith in life.
(Milton Nascimento/Vagner Tiso)

This musical verse was repeated several times. In addition, another refrain often repeated was: "It is forbidden to take 40 winks! 40 winks! 40 winks!...", which symbolized the warning to colleagues who, because of heat fatigue, were not attentive to the class. When this fatigue hit most of those present, any one of the participants would interrupt the presentation of the session with relaxation exercises, which took the coordinators by surprise. The afternoon session generally demanded more energy from the participants because of the rising temperature and the expenditure of energy as a result of the morning's work.

Despite this, at the end of the afternoon the participants suspended the activities to have dinner and, afterward, returned to the lecture room to watch films on the theme "women," which had been selected and obtained by the coordinators. After the presentation of the study results, the coordinators suggested that the participants worked out alternative proposals based on the results presented by the study but relating them to their own necessities.

The light, airy, spacious room in which the course was held was decorated at the initiative of the participants with posters and banners containing sayings of women who had been interviewed and that had been taken from the study report. Participants reflected on the posters that focused on the questions of health, political organization, women's work, and housework. In addition, the coordinators exhibited various photographs of women workers from the study areas.

As to the work of publicizing the event, BENVIRA sent correspondence to roughly 50 grassroots organizations around the Northeast. The communication sent to the movements contained information about the course program, place, date, suggestions about means of transportation and accommodation, and BENVIRA's telephone numbers. In addition, news about the course was published in the principal newspapers of the state.

Other publicity was given by announcements on radio Pajeú of Afogados da Ingazeira, in the program dedicated to the rural worker. This station also gave a prominent place to the course by broadcasting two programs about rural women, an occasion on which the coordinators had the opportunity to publicize the results of the research. During the event, the station conducted interviews with rural leaders about their daily problems and what they had come to understand through the course.

Similarly, the municipal press supported the event when correspondents of the newspaper in the town of Afogados da Ingazeira sent materials about the course to journalists in Recife, the state capital. This news also led to a well-respected newspaper in the south publishing results of the study that had given rise to the course. As a result of this publicity, women's movements in other regions of the country asked for more information about the study.

Representatives of other organizations, for example the World Bank, also showed an interest in getting to know about the study. In relation to the results, the coordinators were

optimistic about the testimony of two representatives of NGOs present who undertook to propose to their groups a work program based on the materials presented during the course.

The question of social interventions that might grow out of the study generated a debate because of the frustration when work was begun and then abandoned and of difficulties confronted by groups in putting into effect actions of this nature.

Even so, participants emphasized that the materials offered were worthwhile and would supply information to be thought over and proposals for social interventions in various aspects. To mount a course of this excellence is an expensive and difficult task but the belief that it generates forms of social intervention capable of improving the quality of life of rural families motivated its organization.

Although the course was conceived as a way to deepen discussions, because it makes the immediate practice of dialogue possible, this resource is limited as a means to publicize the results of studies. It cannot cover the universe of rural workers. To improve on this deficiency, it was decided to adopt, as a complementary device, a booklet of guidelines.

The *booklet* contains research data to be distributed among women's representatives of the various Brazilian regions. This less expensive type of communication may reach a larger public. The objective of the booklet is to show working conditions and the life of women in irrigated areas of the Northeast. Hopefully, the woman worker by examining this information will reflect on how her life is conducted and make an effort to promote social interventions to improve it.

The simple booklet will combine, in the appropriate proportions, contents that concern health, education, work, family, and women's political identity. It will be written in a language accessible to those who have a low level of education. The targets for this booklet should also include institutions such as the Council of Women's Condition, the Unions of Rural Workers, the Central Union of Workers, the Education Centres of Rural Workers, the women's and feminist groups, and NGOs who are committed to women workers.

It is expected that this booklet will stimulate women representatives in initiatives that may flow into possible social interventions in the rural environment. Low-income rural workers have no access to information about social research that deals with their reality. Perhaps this is because rural leaders fail to ask for this information or because of the scarce publicity by bodies responsible for the elaboration of social data. In the case of the rural leaders, the lack of interest in information may be linked to the fact that such information is of little use to this group of people.

Nevertheless, it is important to remember the value of this information for the woman rural worker as it can stimulate discussions and reflections that may permit the woman worker to identify causes and present solutions to her ongoing problems.

The exchange of information between the researchers and the people who are the subject of the research strengthens the learning process of both. At the same time, when a survey gathers primary data, as this one had, it may supply important data for the person under research. Professional bodies and researchers should adopt the practice of exchanging information,

principally in the final phase of their work, for this type of action may bring about the possibility of formulating requests that result in social interventions capable of improving the well-being of those who are at the margin of society.

Final Reflections

Social movements find more room for action in localities where wage-earning work prevails in comparison to other types of work contract. In the rural areas, where, indisputably the number of wage earners is limited, these movements make slow progress.

The unionization of rural workers can be considered weak for its members are not sufficiently prepared to take part in free collective bargaining, profits, management, negotiation of productivity gains, or discussions for technological advances, which are procedures practiced by mature unions and common in politically developed societies.

The fragility of the rural workers' unions, with particular reference to the Northeast, can be justified especially by the diversity of categories that make up these movements such as "parceiros," tied-cottage workers, and cowboys who, despite being workers without land, very often stand up for a wide range of interests (land, increase of wages, etc.). In addition to these, there is the inclusion of the small-scale rural landowners who are in theoretical communion with the ideology of large landowners.

In these rural unions, the participation of women is inexpressive because these unions are traditionally thought of as a man's movement and as such make women's access difficult. Moreover, the donations-before-stimulation paternalist policy commonly adopted, which has health on its bandwagon, limits unionization to the head of the family and removes the possibility of women becoming members. Rural women workers' interest in taking part in the union has grown mainly among women wage earners.

What appears to be lacking is a broadening of the union leaders' political awareness to include the acceptance of the unionization of women. When this awareness exists, the leaders recognize the need to integrate women into the management of the union. They are shown, however, to be equally concerned about the inexperienced participation of women in union movements as they have only recently begun to take part in them. Moreover, these leaders recognize that discrimination against women divides the union struggle and prevents its growth.

In view of the obstacles that rural women workers face in having access to the union, it is probable that some of the women will seek to form informal groups to claim their rights. Besides this, these women create groups to respond to the social problems that involve them.

These women's groups in rural areas of the Northeast, particularly in irrigation, have been spread in the studied region during the last 5 years. The poor political organization of the rural worker has led rural entrepreneurs to disrespect the labour rights of the people in the countryside.

Currently, following the extinction of FUNRURAL, the requests of rural workers have been sent to the federal government. With this change, the enterprises have stopped contributing 2.5% of annual production to social security.

The 1988 Brazilian Constitution guaranteed rights to women that, thus far, have not always been respected by employers. Some rights have not been promulgated and, for this reason, their observation is at the discretion of the judge nominated to try the case.

With the observations made, some recommendations are suggested to improve the performance of the woman worker in regard to her political identity:

- A committee should be created in the Union of Rural Workers, formed by representatives of the Ministry of Labour, women's movements, unions of rural workers, and rural entrepreneurs to help formulate contracts including temporary ones to guarantee rights.
- The colonists, like other rural landowners, should pay an annual production tax of 2.5%, as they did when FUNRURAL existed. This gathering of resources would finance, for example, periods when workers are laid off because of illness, pregnancy, etc., attested by medical reports. This policy would also benefit workers without jobs.
- A fine should be enforced, based on agricultural production, for the employer who prevents an employee from working in his enterprise because the employee went to the Labour Court when the employer breached labour legislation.
- The rural workers' unions should organize training courses for women to equip them to participate in union management.
- Rural workers' unions should be faster in mounting brief information meetings in locations near the enterprises by taking advantage of workers' meal breaks, as well as at the beginning and end of the working day given the difficulty they face in getting from their homes to the union office.
- The rural workers' unions in the irrigation areas should propose a labour policy that considers the role of the woman wage earner and their importance in the area because this group has specific problems. These policies will certainly strengthen the struggle of these unions that combine various categories of workers.
- The discussion of community problems should be included on the agenda of rural workers' union meetings, to the general interests of rural workers.

- The rural workers' unions should be broadened to attend to women and their claims, including the demands for constitutional laws that guarantee rights to women. In this way the union would become stronger and women's struggle more representative.
- Rural workers' unions should hire labour lawyers to avoid the workers, even those already paying for these services, having to resort to private lawyers who are very often only interested in financial rewards and make up cases that harm the workers instead of helping them.

Methodology

To carry out this project, a bibliographic search was made in libraries and bookshops, especially in the northeastern and southern regions of the country. The topics selected of priority were women, technological modernization in the countryside, public policies, and the environment. Also, university teachers, social researchers, specialists in development organizations, and groups committed to the cause of women were consulted.

An exploratory visit was made to the municipalities of the selected irrigation projects (Moxotó, Boacica, Morada Nova, and Tourão). Preliminary information permitted the design and test of the data collection instruments — the questionnaire and the guide for semistructured interviews. As a result, three questionnaires were drawn up: for the women workers of the selected irrigation projects, for those of the dry lands areas, and for the employers of the irrigation projects.

On the exploratory visit about 40 persons were interviewed. To make the most of this visit, contact was also made in the state capitals, with professionals from official organs responsible for the projects, representatives of agricultural workers' federations, and members of state councils for women's rights. In the municipalities information was gathered from NGOs, informal groups of rural women, the Catholic Church, rural entrepreneurs, unions of workers, and rural landowners. The information gathered facilitated drawing up the definitive questionnaires as well as facilitating the development of the fieldwork.

The Projects Selected

Moxotó is a colonization project that has its headquarters in Poço da Cruz in the municipality of Ibimirim in the state of Pernambuco. It is located in the Pernambuco "Sertão" (semi-arid area) and belongs to the microregion of the Sertão do Moxotó. The project has lands in the municipalities of Ibimirim and Inajá. It stretches in a North–South direction along the 40 km length of the Moxotó river valley, the area covered being about 11,800 hectares.

The region's climate is hot, semi-arid and characterized by insufficient and irregular rainfall. The period of rains stretches from December to May at which time around 80% of rainfall occurs. March is the wettest month. The driest period is between August and October; the lowest rainfall is in September. The principal centres for the distribution of the project's production are the towns of Arcoverde, 82 km away; Belo Jardim, 152 km away; Pesqueira, 120 km away; and Recife, 334 km away. Water supplies are guaranteed by the public reservoir of Poço da Cruz, which was constructed between 1937 and 1957 by DNOCS. Its inauguration only

took place in 1959. The area set aside for irrigation has the benefit of an alluvial surface situated from 0.5 km downstream of the reservoir on the right and left banks of the river Moxotó.

The area is divided into family lots with an average size of 8.0 hectares of useful agricultural soil. They are cultivated by irrigation farmers who live in settlements not more than 6 km from the lots. Up until now, four agricultural villages have been built. The project has a technical centre for experimentation and demonstration, which has an area of 70 hectares. The aim is to carry out agronomic surveys and research. The project is served by principal roads (75 km), secondary roads (40 km), and access roads to the lots. As to the irrigated area, the project covers 3,882 hectares with 426 colonists working on them.

The Mixed Agricultural Cooperative of Irrigation Farmers of the Moxotó Valley Limited (CANIVAX) forms part of the project. It was built in 1978 and began operations in 1979. CANIVAX staff is made up of employees contracted by the cooperative.

Tomatoes, bananas, guava, coconuts, oranges, industrial maize, onions, cotton, rice, water melon, and yams are grown on the project. According to the initial plan, the Moxotó project would have an irrigated surface area of 9,600 hectares, an irrigable area of 8,000 hectares, a dry lands area of 3,800 hectares, and a total of 960 irrigation farmers.

The *Boacica* Irrigation project, administered by CODEVASF, is situated on the left bank of the São Francisco River, in the state of Alagoas. It has a total of 5,398 hectares of open fields, of which about 5,300 hectares are protected by dikes to hold floods; it has an irrigable surface of 3,074 hectares by gravity and 260 hectares by spraying. The project was staffed by the settlement of roughly 700 colonists each with an average area of 4 hectares in which rice provides an average annual production of 9 tonnes per hectare over two harvests.

In the project, the greatest problems occur during summer harvest, when snails, widespread in the region, cause considerable damage to rice and produce serious losses. Another problem that affects the Boacica colonists is the insufficient quantity of agricultural equipment belonging to the project. Because of this insufficiency of agricultural machines, rotative agriculture is carried out in the area so that everyone may use the available machinery.

Despite this procedure, however, the producers feel the necessity to resort to manual harvesting. The equipment available to the Boacica colonists in 1989 included: (a) Machines (12 harvesters, 30 tractors, 3 bulldozer tractors, 2 levellers, a back-digger, 2 diggers, a mechanical shovel), and (b) Vehicles (12 automobiles, 11 trucks and vans, and 26 motorbikes)

On the project, the producers have a Unit for the Enrichment and Storage of Rice (UBA) set up close to Igreja Nova, within the influence area of the Boacica perimeter. UBA does not function efficiently because of the lack of energy to the factory. It also needs air-conditioning equipment in the control room, because the equipment reaches high temperatures in the summertime. Studies are being conducted for the creation of a consortium to administer the Unit. The production of enriched rice is sold to Alagoas and Pernambuco. Besides the exploitation of rice, 41 Boacica lot owners have also adopted fishing and have developed fish farming and pig breeding. There are plans for frog breeding, prawn farming, and snail farming.

The project area producers have founded the Association of Producers of the Boacica Irrigated Perimeter (APIB), which includes roughly 200 members. The Boacica Irrigated Perimeter is mainly administered by APIB, which consists of a directorate made up of a president, vice-president, secretary, a financial committee, and a management board to which the operation and maintenance, technical assistance, agricultural mechanization, and administration departments are subject. APIB is registered in the Federal Department of the Ministry of Agriculture of Alagoas as an inspected producer of seeds. In the future, in substitution of APIB, the Boacica project cooperative will be founded. As to the social infrastructure used in common, the project has 17 schools and six health centres.

The *Tourão* project, set up in 1976 and administered by CODEVASF (São Francisco Valley Company), is situated on the right bank of the São Francisco river in the municipality of Juazeiro da Bahia. It has an irrigable area of 10,455 hectares, which are occupied by cattle-breeding enterprises, agricultural industries, and colonists. There is also a dry lands area of 259 hectares.

The growth of sugarcane is predominant. This product represents the most important step forward in the modernization of the sugarcane industry in the Northeast. The perimeter is in the northeast semi-arid region, with an average annual rainfall of 400 mm. It is in a privileged location in view of its proximity to the main highways, which give access to the principal capital cities of the Northeast.

The *Tourão* project is staffed with 29 colonists each with an average lot size of 6 hectares, 18 medium-sized enterprises scattered in an area of 2,035 hectares, and two large enterprises (Agrovale and Frutivale) in an area of 8,238 hectares. The colonization area, at present administered by CODEVASF, will be managed by the Mixed Agricultural Cooperative of the Mandacaru Irrigation Project. The principal crops grown in this area are tomatoes, sugarcane, beans, melons, and onions. In this project, Agrovale and Frutivale were included in the survey.

The Agroindustry of the São Francisco Valley (Agrovale) is a society administered by a four-member board and a council. Over the last 10 years, this enterprise has been devoted to agricultural and industrial activities related to sugarcane. To produce and transform sugarcane, the enterprise uses modern, sophisticated techniques. Given the region's low rainfall, most of which falls on a very limited number of days, the factory functions all the year round.

Because of the intense luminosity and the appropriate use of water, crops in the region complete the maturity circle early. Sugarcane reaches full maturity in 12 months, whereas in the other regions of Brazil, this takes 16 or 18 months. Agrovale has also made a name for itself because of the high rates of production. Although the North/Northeast regions only obtain 40 tons/hectare and the South 56 tons/hectare, Agrovale's experimental fields have already registered 230 tons/hectare according to information from the enterprise.

The transportation system of raw material contributes to the maintenance of a high level of production for, given the strategic location of the industrial factory, transporting the sugarcane is carried out within a maximum radius of 12 km. Agrovale does not work with cane suppliers

as happens with traditional factories. For the distribution of production, the use of railways, river transportation, and airways is basic. The irrigation system adopted is that of gravity by means of infiltration furrows. The maximum number of jobs generated in Agrovale is in the order of 2,500 direct and stable jobs.

The enterprise maintains a minihospital, a canteen, a "supermarket," three schools, a club for small-scale social events, and a football field. In the hospital, according to what the enterprise's representatives say, the services offered are maternity, out-patients' clinic in the medical sector, clinical consultations, exams, external hospitalization, supply of medicines, drips, vaccines, extraction of teeth and fillings, treatment of infections, hygiene education, and infant feeding.

In the educational sector the enterprise offers as services the maintenance of schools, distribution of meals, distribution of uniforms, free transportation, assistance in the setting up of adult literacy programs, and vocational training courses. As to recreation, the enterprise provides workers with sports supplies, promotes football championships, supports sports teams among its factory workers, and maintains the sports fields. The canteen provides "a hot packed lunch," available also to the irrigation farmers, whereas the "supermarket" with the enterprise's permission supplies the workers.

Frutivale is a society that was set up in the area more than 10 years ago and has undergone mainly administrative transformations since 1984. At first, Alfafa of the Northeast Limited, now Frutivale, was created for the growth of alfalfa. While the Tourão project was planned, Alfafa got into partnership with Agrovale. When sold, the new proprietors began to diversify their crop growing and introduced tomatoes, beans, sorghum, grapes, etc.

The enterprise's total area is 5,400 hectares of which 2,500 hectares are irrigable and the rest is reserved for reforestation. At the moment 1,000 hectares are irrigated under the infiltration system (furrows), spraying (central pivot), and dripping. The objective of the managers is to increase their irrigated area to 2,500 hectares.

At the moment, the crops adopted are tomatoes, melons, water melons, maize, beans, onions, and peas. Permanent crops are grapes, bananas, passion fruit, figs, and guava. In carrying out irrigated agriculture, the following is used: (a) Equipment (63 tractors with tires, 2 bulldozer tractors, 2 back-diggers, and a motorized leveller); and (b) Vehicles (11 automobiles, 5 motorbikes).

In 1988, the enterprise generated roughly 429 direct jobs. Five agricultural specialists and six agronomist engineers render technical services to the enterprise.

The Banabuiu Valley Irrigation project is in the municipalities of Morada Nova and Limoeiro do Norte in the state of Ceará. The region is characterized by annual average rain of 700 mm (rainy months are December and May), average annual temperature of 25°C, and average altitude of 80 m above sea level.

The project's water supply is assured by the Arrojado Lisboa public reservoir fed by the rivers Banabuiu and Pedra Branca. The irrigation adopted on the project, by gravity, benefits an

alluvial area from the source dam situated near the town of Morada Nova. The project has a surface area of 12,500 hectares and an irrigated area of 7,444 hectares.

This colonization project is made up of family lots of 5 hectares, exploited by farmers who live in settlements and villages at an average distance of 2 km from their respective agricultural lots. Each residential lot has an average area of 2,000 square metres, including a residence, a barn, cow shed, etc. The population is around 674 colonists. The crops grown are bananas, rice, marrow, cotton, beans, maize, papaya, water melons, tomatoes, and oranges.

Methodological Aspects of Data Collection

The survey sample was obtained from irrigation areas in the Northeast of Brazil. The sample universe, defined from registrations furnished by DNOCS and CODEVASF, was made up of 32,000 irrigation workers. Based on data from FIBGE (1989) indicating that rural women workers made up 43% and allowing that the irrigation area absorbs a greater number of women in relation to the dry areas, it was concluded that 50% of the agricultural labour force was female.

It was considered that 5% of the total estimated 16,000 women irrigation workers would be a representative sample. Representativeness was assessed on the basis of previous survey works undertaken in the rural areas of the Northeast.

The Morada Nova project was excluded from the collection of quantitative data after a field visit. The very low number of women employed in growing rice would have invalidated the application of the questionnaires. The exclusion of Morada Nova, only at this phase of the collection of data, did not compromise the results of the study because the sample survey included the Boacica project that, like Morada Nova, produced rice.

Aside from this, both projects have a common state administration and are staffed by colonists. The inclusion of this project in the subsequent study phases permitted an in-depth analysis of the low participation of women.

The projects in the sample are administered by DNOCS and the company for the development of the São Francisco Valley (CODEVASF) both belonging to the public sector. The survey also included private irrigation into consideration as the Tourão project is administered basically by the private sector.

A number of women workers and employers from the dry areas of the municipalities in which the selected projects were located was taken as a control group. The distribution of cases by type of questionnaire is given in Table 8 on the following page.

The cases were distributed according to the proportion of employment generated in the surveyed areas. The information used for the distribution of cases came from the institutions responsible for the administration of the projects and from the Brazilian Institute of Geography and Statistics Foundation (FIBGE).

Table 8. Distribution of sample cases.

Questionnaire	Moxotó (Ibimirim/Inaja)	Boacica (Penedo)	Tourao (Juazeiro)	Total
Woman irrigation worker	129	271	400	800
Woman dry lands	22	21	37	85
Employer	8	13	2	23
Total	159	305	439	908

In the irrigation projects, the sample of 800 questionnaires was distributed in proportion to the number of jobs generated in each project.⁶ In the dry lands, the sample of 85 questionnaires had a distribution proportional to the employment generated for women rural workers in the municipalities of the irrigation projects. In the same way, the sample of employers had a distribution proportional to the number of rural businesses located in the selected projects.

The collection of data began in November 1988 and lasted until mid-January 1989. The irrigation women workers sample was not completed at this time for Agrovale, between harvests, had a large number of women workers off work.

The data collection was resumed in July 1989. The data collection team was made up of seven interviewers, a field supervisor, and two drivers. The data collectors were professionals from different disciplines, trained to undertake the task.

During the training, the content of the survey and the procedures to be adopted by the data collectors when administering the questionnaires were discussed. The data collection team, in addition to collecting and reviewing the data gathered, produced a report on the "fieldwork" experience. The field supervisor selected at random the women to be interviewed by using the registers of colonists and enterprises obtained "on the spot" (a task that was later carried out by the data collectors). In addition, the supervisor had to report observations on the "fieldwork" and provide quality control of the administered questionnaires.

When the 15-day training was concluded, the field team set off for the municipality of Ibimirim to start data collection in the Moxotó project. The lots to be visited were selected at random by using the registers obtained in the project's local office. In the same way, women workers to be interviewed were drawn at random in the lot itself as a register of workers by gender did not exist.

⁶Projections on female employment prepared by the irrigation projects were used due to the nonexistence of specific data.

Women interviewed, as long as they were over 14 years old, could just as well be wage-earning rural women workers as family helpers who received no pay for their work. In some cases, it was necessary to follow the women workers to their places of residence. No great difficulties occurred during the data collection. The employers interviewed were drawn at random according to the register of colonists supplied by the Moxotó DNOCS office. The employers selected were easily contacted for they were always found in their lots.

The selection process of the dry lands women was also made at random by using the register for rural properties in the municipalities. To be included in the control group, the women selected had to also be a wage earner above 14 years old working on the property selected.

In the Tourão project, the enterprises Agrovale and Frutivale were selected due to their size, existence of permanent wage-earning workers, the crops grown, and the number of jobs generated. The enterprises' representatives were contacted so that they could arrange the place and appropriate time of interviewing the women workers. This contact was necessary for without the agreement it would have been difficult for women to be absent from their duties to answer the questionnaire. Roughly 30 minutes were required to respond to the questionnaire.

In the Tourão project, the names of women who would be interviewed were obtained from the list of employees furnished by the two enterprises selected. In the sugarcane agroindustry, data collection proved to be quite difficult because of the limited number of women working for Agrovale at the time of the study.

In addition, the list was outdated, and it became almost impractical to apply the questionnaire in the workplace. It was decided to collect information also at the transportation, i.e., bus and truck, terminals of the enterprise's employees, or during the journey made by the women workers to the agricultural area.

In the case of Frutivale, its representative provided an updated register of employees, which made it possible to gather data from the women workers in the enterprise. As to the owners of the two enterprises chosen in the Tourão project, it was not possible to contact them because they did not live in the area. This facilitated the questionnaires being responded to satisfactorily by directors and managers of these enterprises.

In Boacica, the situation was not different to that of the other projects for, to avoid losses of women workers, the supervisor advised the interviewers to apply the questionnaire at the workplace after the end of the working day. Women workers, however, showed they were anxious due to the domestic chores that were awaiting them. In view of this situation, the field supervisor decided, with the agreement of the women, to make the interviews at homes at the end of the afternoon, at night, or even on holidays. In Boacica, the selection and sampling process was the same as in the Moxotó project.

During the fieldwork, other difficulties were the access to the interviewees' home, and rain, which created huge muddy places. To find the drawn properties, the team had to make their way through long stretches of dirt roads that had been badly affected by rains.

In general, women received the team with satisfaction and respect. In most cases, the interviewees met the data collectors' request enthusiastically and supportively. Most women interviewed considered it a privilege to participate in the survey because it gave them the opportunity to get a lot off their chests. Others, when their husbands were present, showed inhibition. Some women interviewed took advantage of the moment to make statements about subjects not considered by the study. There were no cancellations or refusals. In their own way, the interviewees expressed their point of view almost without embarrassment.

In gathering the qualitative data, 60 days were needed to undertake 54 interviews between women workers, employers, historians, representatives of official agencies, churchmen, trade union leaders, NGO representatives, agricultural specialists, and members of political parties. The qualitative data gathered were of great value for they helped to explain the quantitative data that, on their own, would have been difficult to interpret. In addition, a camera was used to record facts detected by the survey. The photographs were shown and enjoyed by the participants at an information broadcasting course and the seminar organized by the study team.

Acronyms

APIB	Association of Products of the Boacica Irrigated Perimeter
CANIVAX	Mixed Agricultural Cooperative of Irrigation Farmers of the Moxotó Valley
CODEVASF	São Francisco Valley Company
DNOCS	National Department of Anti-Drought Projects
EMATER	Technical Assistance and Rural Extension Enterprise
EMBRAPA	Cattle-breeding Products Business
FIBGE	Brazilian Institute of Geography and Statistics Foundation
FUNDAJ	Joaquim Nabuco Foundation
FUNRURAL	Rural Development Fund
GDP	Gross domestic product
IDRC	International Development Research Centre, Canada
NGO	Nongovernmental organization
SUDENE	Superintendency for the Development of the Northeast
UBA	Unit for the Enrichment and Storage of Rice

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